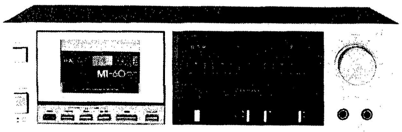
PIONEER®

Service Manual

REPAIR & ADJUSTMENTS



ORDER NO.
ART-687-0

STEREO CASSETTE TAPE DECK

CT-320

MODEL CT-320 COMES IN SIX VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	120V only	U.S.A. model
HE	220V and 240V (switchable)	Europe model
HB	220V and 240V (switchable)	U.K. model
HP	220V and 240V (switchable)	Australia model
D	120V, 220V and 240V (switchable)	General export model
D/G	120V, 220V and 240V (switchable)	U.S. military model

- **This service manual is applicable to the KU type. For servicing of the other types, please refer to the additional service manual.**
- **For the mechanism & circuit descriptions, please refer to the supplement of model CT-720 service manual (ARP-003).**
- **Ce manuel d'instruction se refère au mode de réglage, en français.**
- **Este manual de servicio trata del método de ajuste escrito en español.**

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1. SPECIFICATIONS

Tape Deck Section

System	Compact cassette, 2-channel stereo
Motor	DC servo motor x 1
Heads	"Hard Permilloy" Recording/Playback head x 1 "Ferrite" Erasing head x 1
Fast Winding Time	Approximately 110 seconds (C-60 tape)
Wow and Flutter	No more than 0.05% (WRMS)
Frequency Response	
−20 dB recording:	
Standard, LH tapes	20 to 14,000 Hz (35 to 12,000 ±3 dB)
Chromium dioxide tape	20 to 16,000 Hz (35 to 15,000 Hz ±3 dB)
Metal tape	20 to 17,000 Hz (35 to 16,000 Hz ±3 dB)
0 dB recording:	
Chromium dioxide tape	35 to 8,000 Hz ±3 dB
Metal tape	35 to 12,500 Hz ±3 dB
Signal-to-Noise Ratio	
Dolby NR OFF	More than 58 dB
Dolby NR ON	More than 68 dB (over 5 kHz)
Harmonic Distortion	No more than 1.2% (0 dB)
Input (Sensitivity/Miximum allowable input/Impedance)	
Mic (L, R)	0.3 mV/57 mV/10 kΩ, 6 mm diam. jack
(Reference MIC impedance; 250 Ω to 10 kΩ)	
LINE (INPUT)	50 mV/25 V/75 kΩ, Pin jack
Output (Reference level/Load impedance)	
LINE (OUTPUT)	450 mV/50 kΩ, Pin jack

Subfunctions

Dolby NR system (ON/OFF)
One touch recording system
Stand-by mechanism with unattended recording
REC muting function
MS (Music Search) system
Soft push operating mechanism
5 point LED, Peak level meter
3 position tape selector (NORM/CrO_2/METAL)

Miscellaneous

Power Requirements	AC120 V, 60 Hz
Power Consumption	16 W
Dimension	420 (W) x 110 (H) x 220 (D) mm 16-9/16 (W) x 4-5/16 (H) x 8-7/16 (D) in.
Weight (without package)	3.9 kg (8 lb 9 oz)

Furnished Parts

Connection cord with pin plugs	2
Operating instructions	1

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

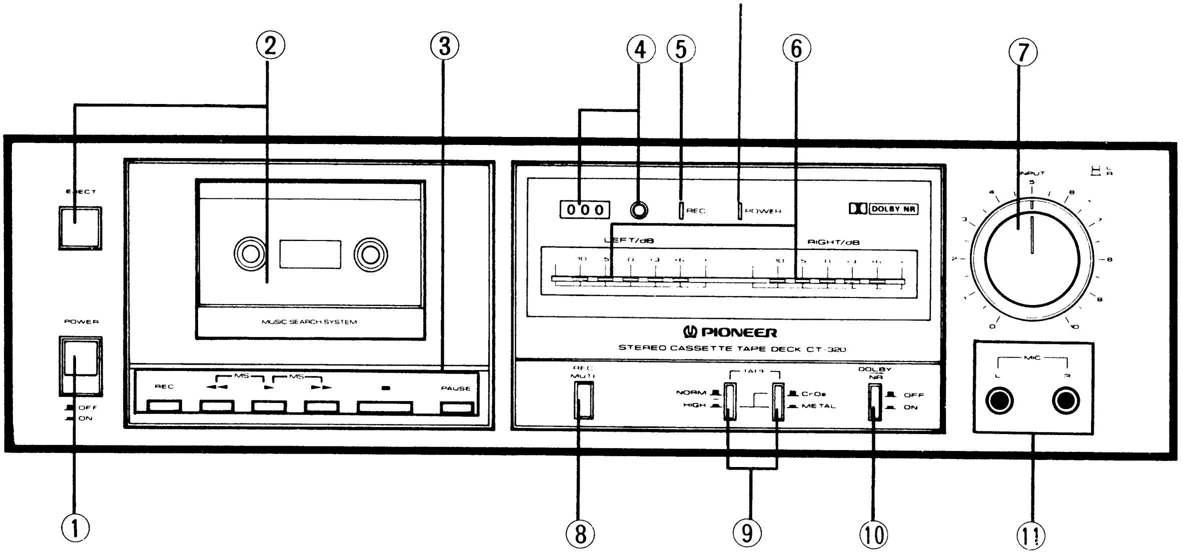
NOTES:

1. Reference Recording Level: Meter 0 dB indicating level (160 nwb/m magnetic level = Philips cassette reference level)
2. Reference Signal: 333 Hz
3. Wow & Flutter: ● JIS [3 kHz, with acoustic compensation (weighted), rms value]
4. Frequency Response: ● Measured at −20 dB level, DOLBY NR OFF, level deviation is ±6 dB without indication.
5. Signal to Noise Ratio: ● Measured at the third harmonic distortion 3% level, weighted.
6. Sensitivity: Input level (mV) required for reference recording level with input (REC) controls set to maximum.
7. Maximum allowable Input: While decreasing settings of input (REC) level control and increasing level at input jacks, this is the maximum input level (mV) at the point where recording amplifier output waveform becomes clipped.
8. Reference Output Level: Playback output level when meter indicates 0 dB.

*

- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- "Dolby" and the double-D ◻◻ symbol are trade marks of Dolby Laboratories Licensing Corporation.

2. FRONT PANEL FACILITIES



①POWER switch

Depress this switch to turn on or turn off power. When switch is depressed power is supplied and POWER indicator lights. When switch is released power is turned off and POWER indicator is extinguished.

② EJECT button and cassette holder

The cassette tape is housed in this holder .

To open the holder: Depress the EJECT button.
To close the holder: Push the holder by hand.

③Function switches

REC switch:
Depress to start the recording operations.

REWIND switch (◀◀):
Depress to rewind the tape.

PLAY switch (▶):
Depress to start tape play.
When using the Music Search(MS) function, operate the PLAY switch(▶)and REWIND switch (◀◀) or the FAST FORWARD switch (▶▶) in combination.

FAST FORWARD switch (▶▶):
Depress to fast forward the tape.

PAUSE switch:
Depress to temporarily suspend recording or to adjust the recording level.
Release the PAUSE switch to resume recording.
NOTE: The tape will not stop even if this switch is depressed when you are performing a rewind or fast forward operation.

STOP switch (■):
Depress to stop the playback, recording, fast forward and rewind operations.

④Tape COUNTER and RESET button

The figures on the tape counter increase or decrease in line with the forward or reverse movement of the tape. If the counter is set to "000" at the start of recording, it will be easy to find the recording start position when you want to listen to the program again at a later date. (Rewind the tape to the "000" position on the counter.)

* The word "Dolby" and DD are trademark of Dolby Laboratories Licensing Corporation.

⑤REC indicator

This lights when the REC switch is depressed.

⑥ Recording/playback level meter

This indicates the strength of the sound being played back or the sound about to be recorded.

⑦ INPUT recording level controls

Rotate these controls while observing the level meter when adjusting the strength of the sound that is to be recorded. The strength is increased when the controls are rotated clockwise from the "0" minimum position.
Front control: For left channel adjustments
Rear control: For right channel adjustments
The controls normally rotate together. To rotate only one control, hold the other so that it will not move.

⑧ REC MUTE switch

Depress to create unrecorded blanks between tape programs. When the switch is **pushed** during recording, no sound is recorded for as long as the switch is in the depressed position (thereby creating an unrecorded blank).

⑨ TAPE SELECTOR switches

Use these switches in line with the tapes being used.

For normal tapes:
- Set the left-side switch to the NORM ▬ (out) position.
- The right-side switch position is not used.

For chrome tapes:
- Depress the left-side switch to the HIGH ▬ (in) position.
- Set the right-side switch to the CrO_2 ▬ (out) position.

For metal tapes:
- Depress the left-side switch to the HIGH ▬ (in) position.
- Depress the right-side switch to the METAL ▬ (in) position.

⑩ DOLBY* NR switch

Set to the depressed ON position when recording and this will reduce the amount of tape hiss. Also set to ON when playing a tape which has been recorded using the Dolby noise reduction system.

⑪ MIC jacks

Insert the microphone plugs (L and R) into these jacks when recording with microphones.

3. DISASSEMBLY

NOTE:
Do not apply unnecessary force to hooks since this may result in damage.

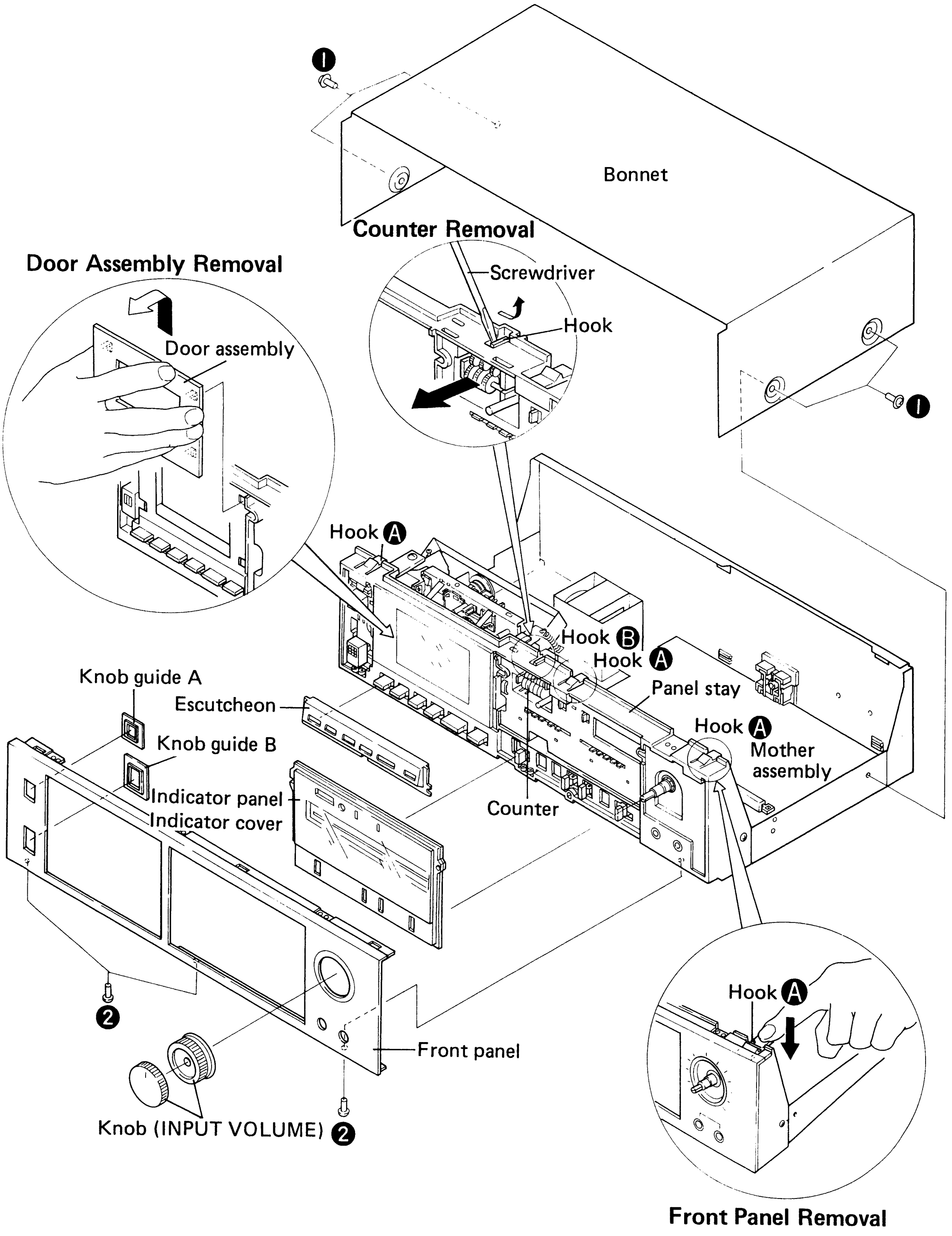

❶
Bonnet
❶
Counter Removal
Screwdriver
Hook
Door Assembly Removal
Door assembly
Hook Ⓐ
Hook Ⓑ
Hook Ⓐ
Panel stay
Hook Ⓐ
Mother assembly
Knob guide A
Escutcheon
Knob guide B
Indicator panel
Indicator cover
Counter
❷
Front panel
Knob (INPUT VOLUME) ❷
Hook Ⓐ
Front Panel Removal

Fig. 3-1 Disassembly 1

Bonnet Removal

Remove the four screws ❶ on each side of the bonnet.

Front Panel Removal

1. Pull off the INPUT VOLUME knobs.
2. Remove the three screws ❷ from the bottom edge of the front panel.
3. Gently push the hooks Ⓐ of the panel stay and remove the front panel.
4. Then indicator panel, indicator cover and escutcheon can be removed.

Door Assembly Removal

1. Depress the EJECT button and open the cassette holder.
2. Pull up the door assembly and remove it.

Counter Removal

1. Gently push the hook Ⓑ of the panel stay with the small screwdriver.
2. Pull the counter toward you and remove it.

Mechanism Assembly Removal

1. Remove the counter belt and the REC joint.
2. Remove the six screws ❸.

Indicator Assembly Removal

Remove the hooks Ⓒ of the panel stay and remove the indicator panel.

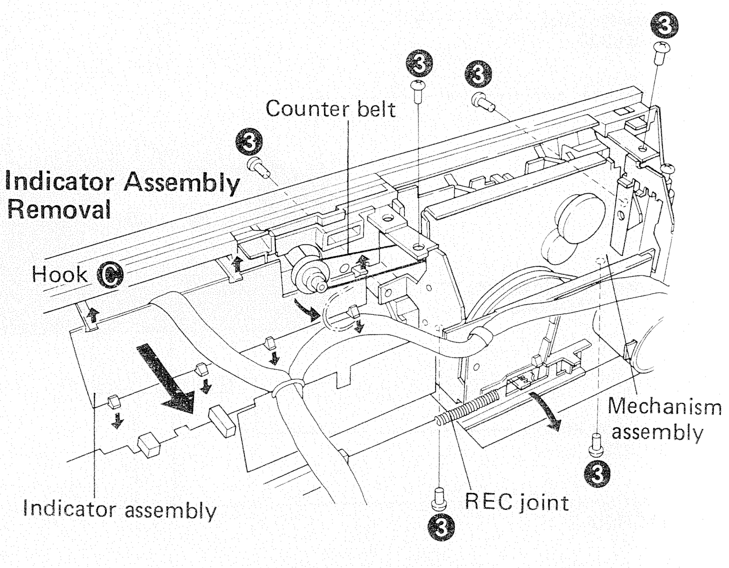
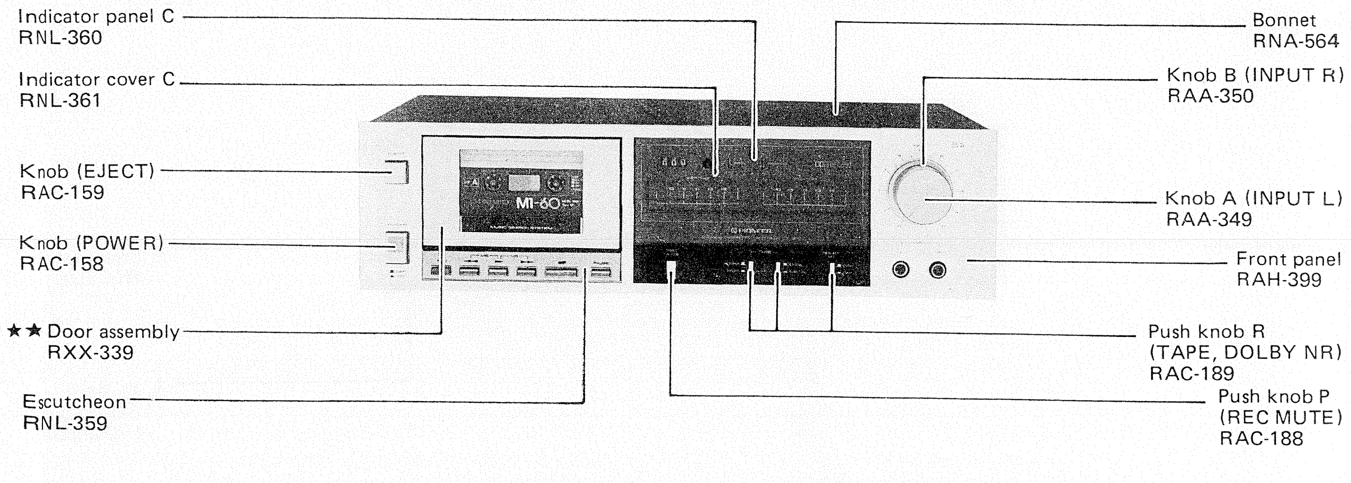

❸
❸
❸
Counter belt
❸
Indicator Assembly Removal
Hook Ⓒ
Mechanism assembly
❸
Indicator assembly
REC joint
❸

Fig. 3-2 Disassembly 2

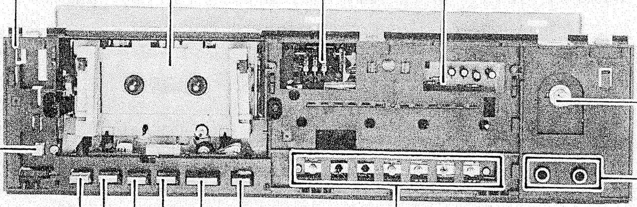
4. PARTS LOCATION

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Front Panel View


Indicator panel C
RNL-360
Indicator cover C
RNL-361
Knob (EJECT)
RAC-159
Knob (POWER)
RAC-158
★★ Door assembly
RXX-339
Escutcheon
RNL-359
Bonnet
RNA-564
Knob B (INPUT R)
RAA-350
Knob A (INPUT L)
RAA-349
Front panel
RAH-399
Push knob R
(TAPE, DOLBY NR)
RAC-189
Push knob P
(REC MUTE)
RAC-188

Front View with Front Panel Removed



Cassette plate
RAH-397

Panel stay

⚠ ★★ Power switch
RSA-046

Function knob L
RAC-191

Function knob K
RAC-190

Counter
RAW-169

Indicator assembly
RWX-516

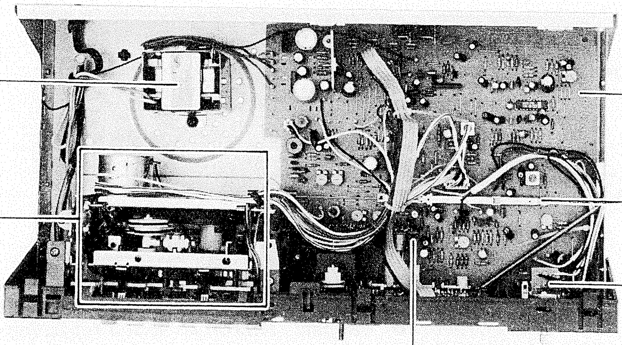
★ Volume (INPUT)
RCV-095

MIC jack
RKN-073

★★ Push switch assembly
RSG-120

Function knob P
RAC-212

Top View with Bonnet Removed



⚠ ★ Power transformer (120V)
RTT-235

Mechanism assembly
RYM-119

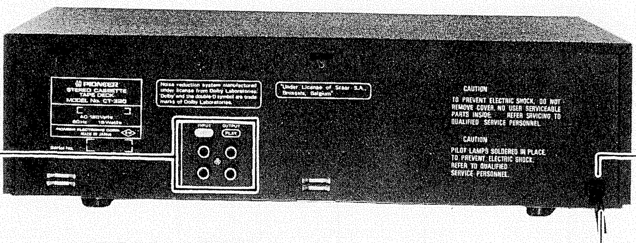
Mother assembly
RWX-514

★★ Slide switch
RSH-043

Volume assembly

REC amplifier assembly
RWX-517

Rear Panel View

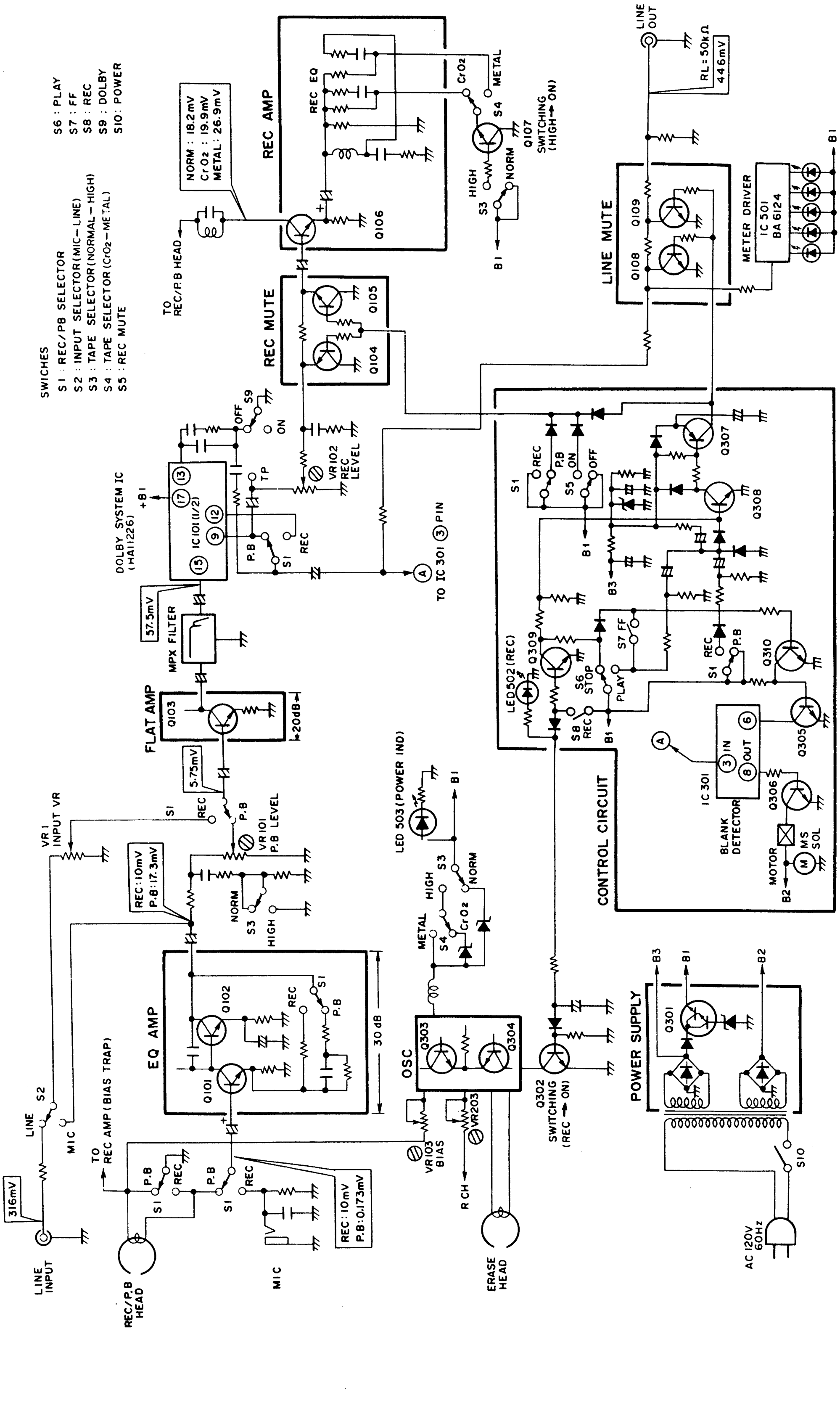


Terminal (LINE)
RKB-018

⚠ Strain relief
REC-376

⚠ AC cord
RDG-022
(RDG-030)

5. BLOCK DIAGRAM

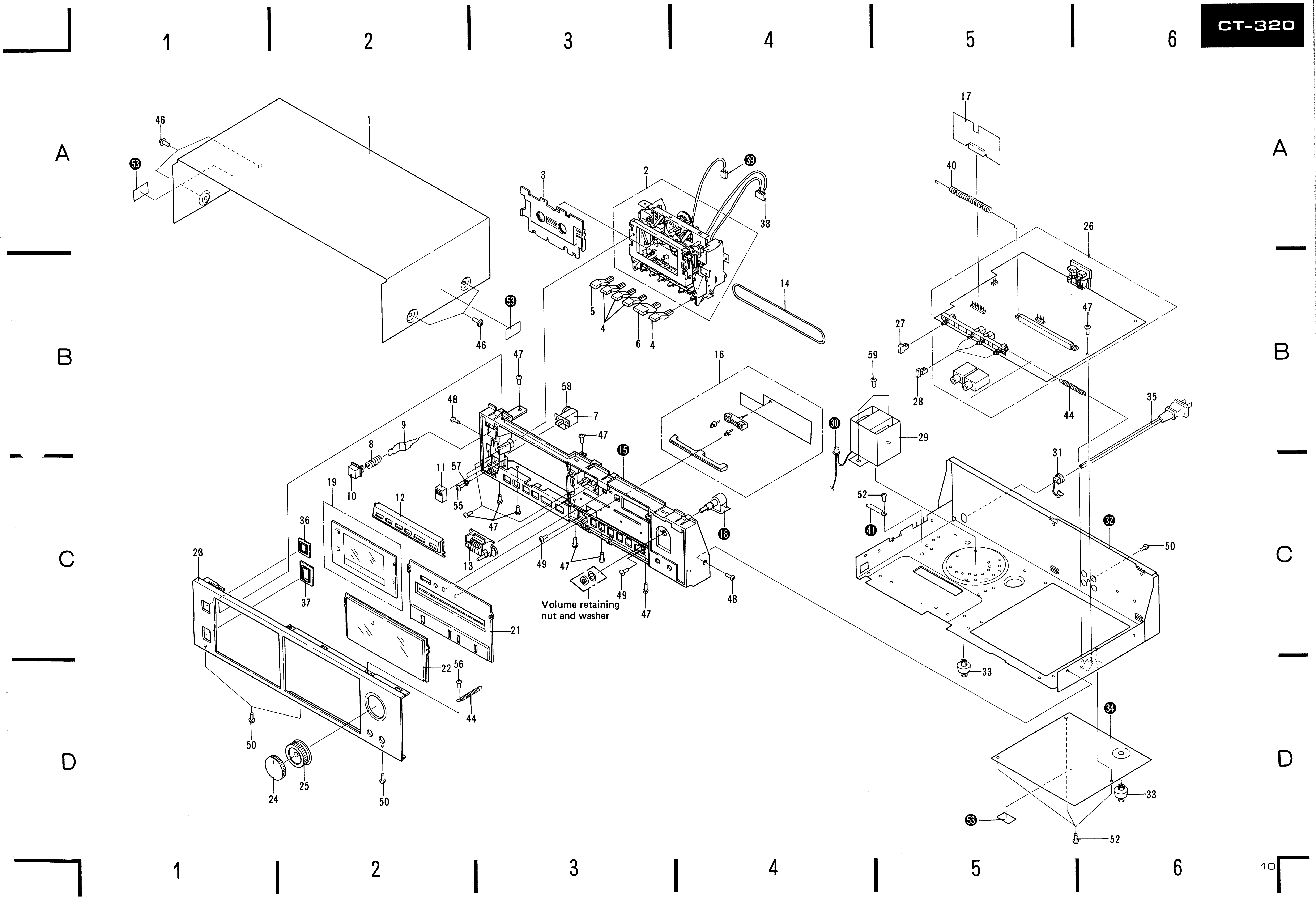

SWICHES
S1 : REC/PB SELECTOR
S2 : INPUT SELECTOR (MIC-LINE)
S3 : TAPE SELECTOR (NORMAL-HIGH)
S4 : TAPE SELECTOR (CrO2-METAL)
S5 : REC MUTE
S6 : PLAY
S7 : FF
S8 : REC
S9 : DOLBY
S10 : POWER
LINE INPUT
316mV
REC/P.B HEAD
MIC
LINE
S2
VR1 INPUT VR
TO REC AMP (BIAS TRAP)
REC : 10mV
P.B : 0.173mV
EQ AMP
Q101
Q102
30 dB
REC : 10mV
P.B : 17.3mV
NORM
S3
HIGH
VR101 P.B LEVEL
5.75mV
FLAT AMP
Q103
20dB
MPX FILTER
57.5mV
DOLBY SYSTEM IC (HA11226)
IC101(1/2)
+B1
TP
VR102 REC LEVEL
OFF
S9
ON
TO IC301 ③ PIN
REC MUTE
Q104
Q105
TO REC/PB HEAD
NORM : 18.2mV
CrO2 : 19.9mV
METAL : 26.9mV
REC AMP
REC EQ
Q106
CrO2
METAL
S4
Q107 SWITCHING (HIGH→ON)
HIGH
NORM
B1
LINE OUT
RL=50kΩ
446mV
LINE MUTE
Q108
Q109
METER DRIVER
IC501 BA6124
LED 503 (POWER IND)
OSC
Q303
Q304
VR103 BIAS
VR203
R CH
ERASE HEAD
Q302 SWITCHING (REC→ON)
CONTROL CIRCUIT
Q307
Q308
Q309
Q310
Q305
Q306
LED502 (REC)
S5
S6 STOP
PLAY
S7 FF
S8 REC
IC301
BLANK DETECTOR
③ IN
⑧ OUT
⑥
MOTOR
MS SOL
B2
B3
POWER SUPPLY
Q301
S10
AC 120V 60Hz

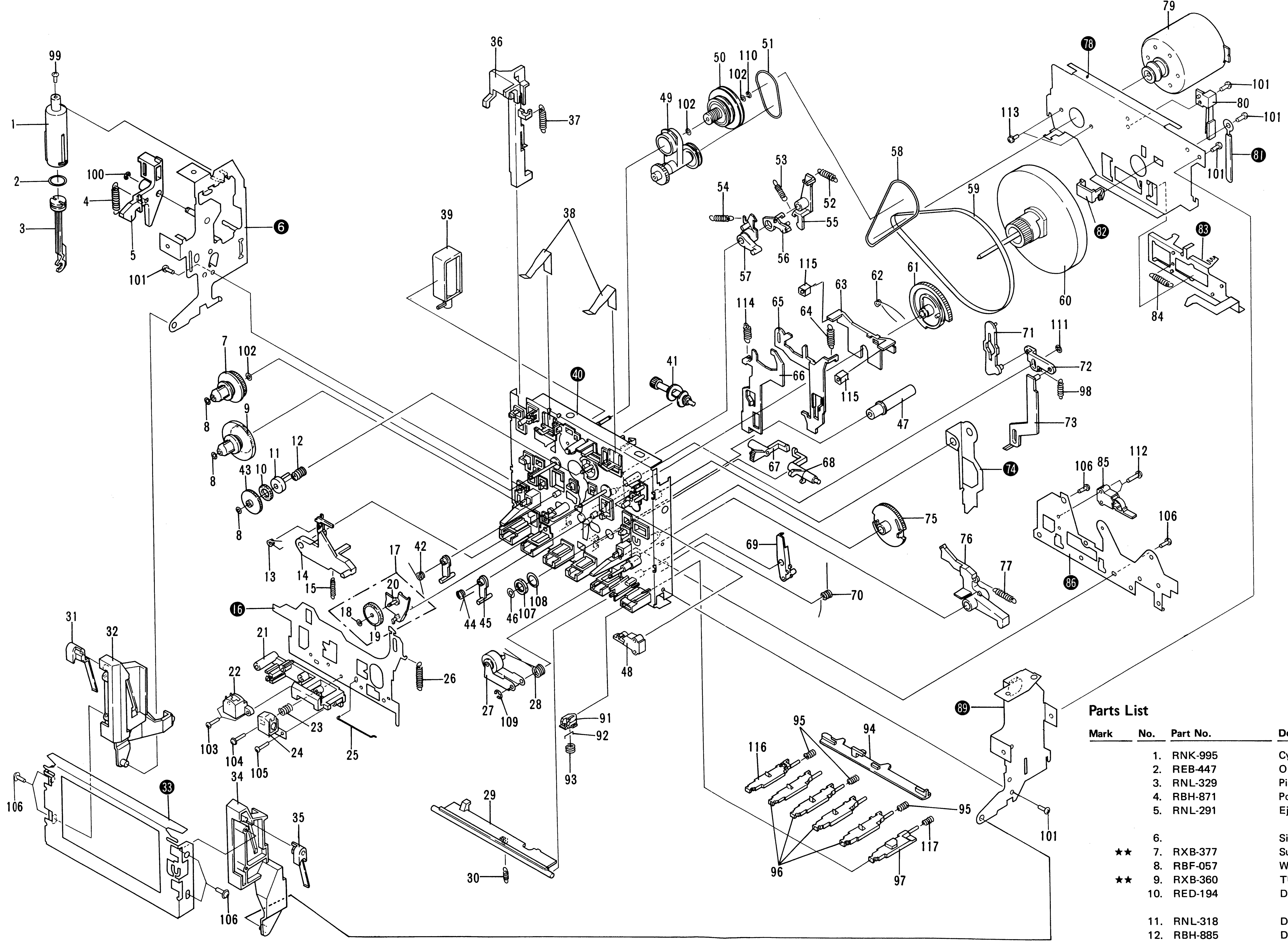
6. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Parts List

Mark	No.	Part No.	Description
	1.	RNA-564	Bonnet
	2.	RYM-119	Mechanism assembly
	3.	RAH-397	Cassette plate
	4.	RAC-190	Function knob K
	5.	RAC-191	Function knob L
	6.	RAC-212	Function knob P
⚠ ★★	7.	RSA-046	Power switch
	8.	RBH-750	Eject spring
	9.	RNH-106	Eject plate
	10.	RAC-159	Knob (EJECT)
	11.	RAC-158	Knob (POWER)
	12.	RNL-359	Escutcheon
	13.	RAW-169	Counter
★★	14.	REB-240	Sensing belt
	15.		Panel stay
	16.	RWX-516	Indicator assembly
	17.	RWX-517	REC amplifier assembly
	18.		Volume assembly
	19.	RXX-339	Door assembly
	20.	....	....
	21.	RNL-360	Indicator panel C
	22.	RNL-361	Indicator cover C
	23.	RAH-399	Front panel
	24.	RAA-349	Knob A (INPUT L)
	25.	RAA-350	Knob B (INPUT R)
	26.	RWX-514	Mother assembly
	27.	RAC-188	Push knob P (REC MUTE)
	28.	RAC-189	Push knob R (TAPE, DOLBY NR)
⚠ ★	29.	RTT-235	Power transformer (120V)
	30.		Wire nut
⚠	31.	REC-376	Strain relief
	32.		Main chassis
	33.	REC-369	Foot assembly
	34.		Bottom plate
⚠	35.	RDG-022	AC cord
⚠		(RDG-030)	
	36.	RNL-224	Knob guide A
	37.	RNL-185	Knob guide B
	38.	RKP-296	Connector assembly 6P
	39.		Connector assembly 2P
	40.	RBH-896	REC joint B
	41.		UL cord clamper B
	42.	....	....
	43.	....	....
	44.	RBH-899	Earth spring
	45.	....	....
	46.	RBA-053	Screw
	47.	VCZ30P080FMC	Screw
	48.	CMZ30P060FMC	Screw
	49.	PMA30P060FMC	Screw
	50.	BBZ30P080FMC	Screw
	51.	....	....
	52.	VCZ30P060FMC	Screw
	53.		UL caution label
	54.	....	....
	55.	RBA-077	Step screw
	56.	PSZ26P040FMC	Screw
	57.	WA42N080W030	Washer
	58.	RCG-006	Capacitor (0.01/AC250)
	59.	VBZ40P100FMC	Screw


A
B
C
D
Volume retaining
nut and washer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101

Parts List

Mark	No.	Part No.	Description
	1.	RNK-995	Cylinder
	2.	REB-447	O ring
	3.	RNL-329	Piston
	4.	RBH-871	Pocket return spring
	5.	RNL-291	Eject lever
	6.		Side plate L assembly B
★★	7.	RXB-377	Supply reel base assembly
	8.	RBF-057	Washer
★★	9.	RXB-360	TU reel base assembly
	10.	RED-194	Detector felt
	11.	RNL-318	Detector disk
	12.	RBH-885	Detector spring
	13.	RBH-873	Idler pressure spring
	14.	RNL-298	Action lever
	15.	RBH-875	Action lever spring

Mark	No.	Part No.	Description
	16.		Head base
	17.	RXB-579	Idler arm full assembly
	18.	WA17D040D025	Washer
★★	19.	RNL-337	TU idler
	20.		Idler arm assembly
	21.	RNL-050	Sub head base
★	22.	RPB-085	Erase head
	23.	RBH-723	Head adjust spring
★★	24.	RPB-091	REC/PB head
	25.	RBH-782	HB drive spring
	26.	RBH-874	HB return spring
★★	27.	RXB-495	Pinch arm assembly
	28.	RBH-890	Pinch pressure spring
	29.	RNL-303	Lock plate
	30.	RBH-887	Lock plate spring
	31.	RNL-057	Pocket spring L
	32.	RNL-332	Pocket L
	33.		Pocket frame A
	34.	RNL-333	Pocket R
	35.	RNL-058	Pocket spring R
	36.	RNL-284	REC detector arm
	37.	RBH-883	Detector arm spring
	38.	RBK-166	Half set spring
★	39.	RXP-112	Plunger solenoid
	40.		Chassis assembly
	41.	RNL-322	Cam gear
	42.	RBH-905	Lock lever spring L
	43.	RNK-998	Idler gear
	44.	RBH-908	Lock lever spring R
	45.	RNL-285	HB lock lever
	46.	RBF-030	Oil stopper
	47.	RXB-582	Metal holder assembly
★★	48.	RSN-034	Lever switch
	49.	RXB-577	Drive arm full assembly
	50.	RXB-580	Drive pulley assembly
★★	51.	REB-455	Drive belt B
	52.	RBH-876	Gear lever spring A
	53.	RBH-877	Gear lever spring B
	54.	RBH-878	Gear lever spring C
	55.	RNL-297	Gear lever A
	56.	RNL-282	Gear lever B
	57.	RNL-296	Gear lever C
★★	58.	REB-454	Drive belt A
★★	59.	REB-453	Capstan belt
	60.	RXB-576	Flywheel assembly
	61.	RNL-288	Cam gear
	62.	RBH-879	Trigger spring
	63.	RNL-280	Brake plate
	64.	RBH-884	Action plate spring
	65.	RNL-292	FF action plate
	66.	RNL-290	REW action plate
	67.	RNL-277	Joint L
	68.	RNL-276	Joint R
	69.	RNL-281	Gear lever R
	70.	RBH-881	Trigger spring R

Mark	No.	Part No.	Description
	71.	RNL-274	Detector lever
	72.	RNL-275	Link
	73.	RNL-289	Stop lever
	74.		REC action lever
	75.	RNL-294	Cam gear R
	76.	RNL-295	Pause lever
	77.	RBH-880	Pause lever spring
	78.		Flywheel receptacle
★★	79.	RXM-088	Motor assembly
★★	80.	RSN-025	Leaf switch
	81.		UL cord clamper
	82.		Thrust receptacle
	83.		REC action plate
	84.	RBH-882	REC return spring
★★	85.	RSN-033	Lever switch
	86.	. . .	Plate
	87.	. . . .	. . . .
	88.	. . . .	. . . .
	89.		Side plate R
	90.	. . . .	. . . .
	99.	VCZ26P090FMC	Screw
	100.	YE25FUC	Washer
	101.	VCZ26P060FMC	Screw
	102.	WA21D040D25	Washer
	103.	PMZ20P130FMC	Screw
	104.	iMZ20Y120FMC	Screw
	105.	PMZ20P120FMC	Screw
	106.	ATZ26P060FZK	Screw
	107.	NK90FUC	Nut
	108.	WG90FUC	Washer
	109.	YE20FUC	Washer
	110.	YE15FUC	Washer
	111.	YS20FBT	Washer
	112.	PMZ20P080FMC	Screw
	113.	PMA26P040FMC	Screw
	114.	RBH-911	Action plate spring L
	115.	REB-466	Brake shoe
	116.	RNL-384	REC button
	117.	RBH-909	Pause button spring

7. PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

  560Ω 56 x 10^1 561 . . . . RD¼PS $\boxed{5}\boxed{6}\boxed{1}$ J
  47kΩ 47 x 10^3 473 . . . . RD¼PS $\boxed{4}\boxed{7}\boxed{3}$ J
  0.5Ω 0R5 . . . . RN2H $\boxed{0}\boxed{R}\boxed{5}$ K
  1Ω 010 . . . . RS1P $\boxed{0}\boxed{1}\boxed{0}$ K

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

  5.62kΩ 562 x 100 5621. . . . . RN¼SR $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ F
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*

  ★★ GENERALLY MOVES FASTER THAN ★.

  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Part No.	Symbol & Description
	RWX-514	Mother assembly Volume assembly
	RWX-517	REC amplifier assembly
	RWX-516	Indicator assembly

OTHERS

Mark	Part No.	Symbol & Description
⚠ ★	RTT-235	Power transformer (120V)
⚠	RDG-022	AC cord
⚠	(RDG-030)	
★★	RPB-091	REC/PB head
★	RPB-085	Erase head
	RYM-119	Mechanism assembly

Mother Assembly (RWX-514)

SWITCHES

Mark	Part No.	Symbol & Description	
★★	RSH-043	S1	Slide switch (REC/PB SELECTOR)
	RKN-073	S2	MIC jack
★★	RSG-120	S3–S5, S9	Push switch assembly (TAPE, DOLBY NR, REC MUTE)

COILS

Mark	Part No.	Symbol & Description	
	RTF-089	L101, L201	MPX filter
	RTF-084	L103, L203	Trap coil
	RTF-057	L301	Line coil
	RTD-026	L302	OSC coil

CAPACITORS

Mark	Part No.	Symbol & Description
	CKDYF 473Z 50	C101, C201, C327
	CEA R10M 50	C124, C126, C224, C226, C315, C316
	CEA R33M 50	C123, C127, C223, C227, C318
	CEA R47M 50	C129, C229
	CEA 010M 50	C320
	CEA 4R7M 50	C307, C322
	CEA 100M 16	C109, C110, C113, C115, C117, C119, C125, C128, C137, C209, C210, C213, C215, C217, C219, C225, C237
	CEA 220M 16	C324, C325, C332
	CEA 330M 16	C108, C208, C306, C311, C319, C326
	CEA 470M 16	C103, C203, C329, C333
	CEA 101M 16	C304
	CEA 101M 25	C303, C331
	CEA 221M 16	C328
	CEA 471M 16	C118, C305
	CEA 102M 25	C301, C302
	CEANL 100M 16	C105, C205
	CQMA 102K 50	C308, C309, C323
	CQMA 182K 50	C310
	CQMA 332K 50	C116, C216
	CQMA 472K 50	C121, C221
	CQMA 103K 50	C111, C211, C317
	CQMA 153K 50	C120, C122, C220, C222
	CQMA 223K 50	C330
	CQMA 104K 50	C321
	CQMA 153J 50	C112, C212
	CQPA 332J 100	C312
	CCDSL 220K 50	C107, C207
	CCDSL 101K 50	C106, C114, C206, C214
	CCDSL 181K 50	C104, C204
	CCDSL 471K 50	C102, C136, C202, C236
	CCDSL 473K 50	C313, C314

7. PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

  560Ω　56 x 10^1　561 . . . . RD¼PS [5][6][1] J
  47kΩ　47 x 10^3　473 . . . . RD¼PS [4][7][3] J
  0.5Ω　0R5 . . . . RN2H [0][R][5] K
  1Ω　010 . . . . RS1P [0][1][0] K

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

  5.62kΩ　562 x 100　5621. . . . . RN¼SR [5][6][2][1] F
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*

  ★★ GENERALLY MOVES FASTER THAN ★.

  This classification shall be adjusted by each distributor because it depends on model number , temperature, humidity, etc.

Miscellaneous Parts

P.C. BOARD ASSEMBLIES

Mark	Part No.	Symbol & Description
	RWX-514	Mother assembly Volume assembly
	RWX-517	REC amplifier assembly
	RWX-516	Indicator assembly

OTHERS

Mark	Part No.	Symbol & Description
⚠ ★	RTT-235	Power transformer (120V)
⚠	RDG-022	AC cord
⚠	(RDG-030)	
★★	RPB-091	REC/PB head
★	RPB-085	Erase head
	RYM-119	Mechanism assembly

Mother Assembly (RWX-514)

SWITCHES

Mark	Part No.	Symbol & Description
★★	RSH-043	S1 Slide switch (REC/PB SELECTOR)
	RKN-073	S2 MIC jack
★★	RSG-120	S3–S5, S9 Push switch assembly (TAPE, DOLBY NR, REC MUTE)

COILS

Mark	Part No.	Symbol & Description
	RTF-089	L101, L201 MPX filter
	RTF-084	L103, L203 Trap coil
	RTF-057	L301 Line coil
	RTD-026	L302 OSC coil

CAPACITORS

Mark	Part No.	Symbol & Description
	CKDYF 473Z 50	C101, C201, C327
	CEA R10M 50	C124, C126, C224, C226, C315, C316
	CEA R33M 50	C123, C127, C223, C227, C318
	CEA R47M 50	C129, C229
	CEA 010M 50	C320
	CEA 4R7M 50	C307, C322
	CEA 100M 16	C109, C110, C113, C115, C117, C119, C125, C128, C137, C209, C210, C213, C215, C217, C219, C225, C237
	CEA 220M 16	C324, C325, C332
	CEA 330M 16	C108, C208, C306, C311, C319, C326
	CEA 470M 16	C103, C203, C329, C333
	CEA 101M 16	C304
	CEA 101M 25	C303, C331
	CEA 221M 16	C328
	CEA 471M 16	C118, C305
	CEA 102M 25	C301, C302
	CEANL 100M 16	C105, C205
	CQMA 102K 50	C308, C309, C323
	CQMA 182K 50	C310
	CQMA 332K 50	C116, C216
	CQMA 472K 50	C121, C221
	CQMA 103K 50	C111, C211, C317
	CQMA 153K 50	C120, C122, C220, C222
	CQMA 223K 50	C330
	CQMA 104K 50	C321
	CQMA 153J 50	C112, C212
	CQPA 332J 100	C312
	CCDSL 220K 50	C107, C207
	CCDSL 101K 50	C106, C114, C206, C214
	CCDSL 181K 50	C104, C204
	CCDSL 471K 50	C102, C136, C202, C236
	CCDSL 473K 50	C313, C314

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-150 (RCP-195)	VR101, VR201 Semifixed (22k-B)
★	RCP-149 (RCP-193)	VR102, VR202, VR301 Semifixed (10k-B)
★	RCP-155 (RCP-200)	VR103, VR203 Semifixed (150k-B)
	RD¼PM□□□J	R101–R115, R117–R120, R122–R134, R146–R151, R153–R156, R201–R215, R217–R220, R222–R234, R246–R251, R253–R256, R302–R307, R309–R315, R328, R330–R345
	RD½PSF□□□J	R116, R301, R327, R346

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SC2240	Q101, Q201
★★	2SC1740LN (2SC2021) (2SC1815) (2SC2634NC)	Q102–Q105, Q108, Q109, Q202–Q205, Q208, Q209, Q305, Q308–Q310
★★	2SC1740LN-S (2SC1815-GR)	Q302–Q304
⚠ ★★	2SC2026 (2SC2673) (2SC1383NC)	Q306
⚠ ★★	2SD837 (2SD686) (2SD1031)	Q301
★★	2SA933LN (2SA937) (2SA1127NC) (2SA1015)	Q307
★★	HA11226	IC101
★★	BA336	IC301
⚠ ★	SIVB10	D301, D302
⚠ ★	W03B (W03C)	D304, D314, D320
★	1K34A (1K60A) (0A90)	D101, D201
★	1S2473 (US1015)	D102, D202, D303, D305–D313

OTHER

Mark	Part No.	Symbol & Description
	RKB-018	Terminal (LINE)

Volume Assembly

Mark	Part No.	Symbol & Description
★	RCV-095	VR1 volume (INPUT)

REC Amplifier Assembly (RWX-517)

COILS

Mark	Part No.	Symbol & Description
	RTF-085	L102, L202 Peaking coil (3.9mH)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 100M 16	C130–C132, C230–C232
	CQMA 333J 50	C133, C134, C233, C234
	CQMA 103J 50	C135, C235
	CEA 010M 50	C132, C232

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PM□□□J	R135–R145, R152, R235–R245, R252

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SC2021	Q106, Q107, Q206, Q207
★★	(2SC1740LN)	
★★	(2SC1815)	
★★	(2SC2634NC)	

Indicator Assembly (RWX-516)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 100M 16	C501–C504
	CKDYF 473Z 50	C505

RESISTORS

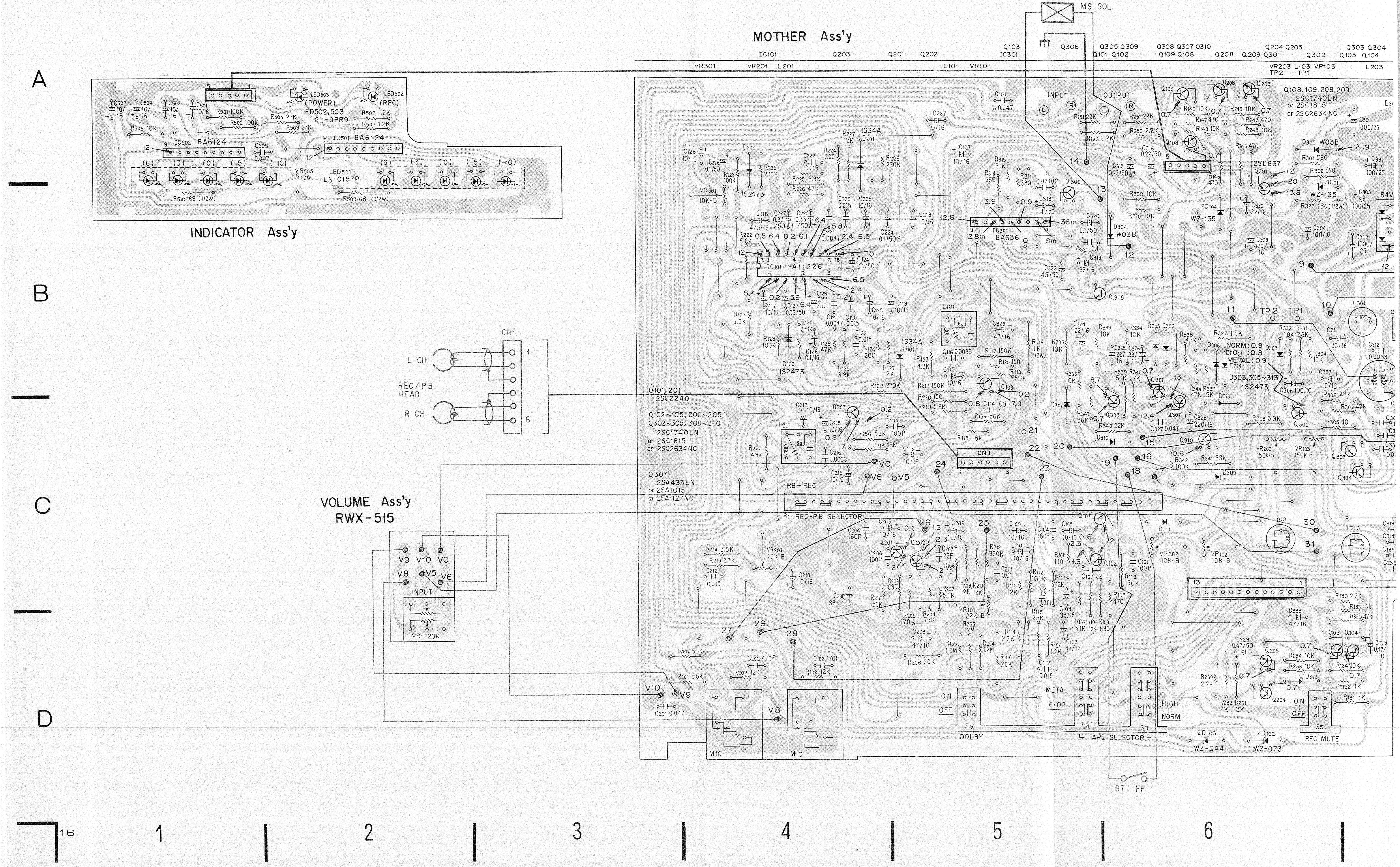
Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

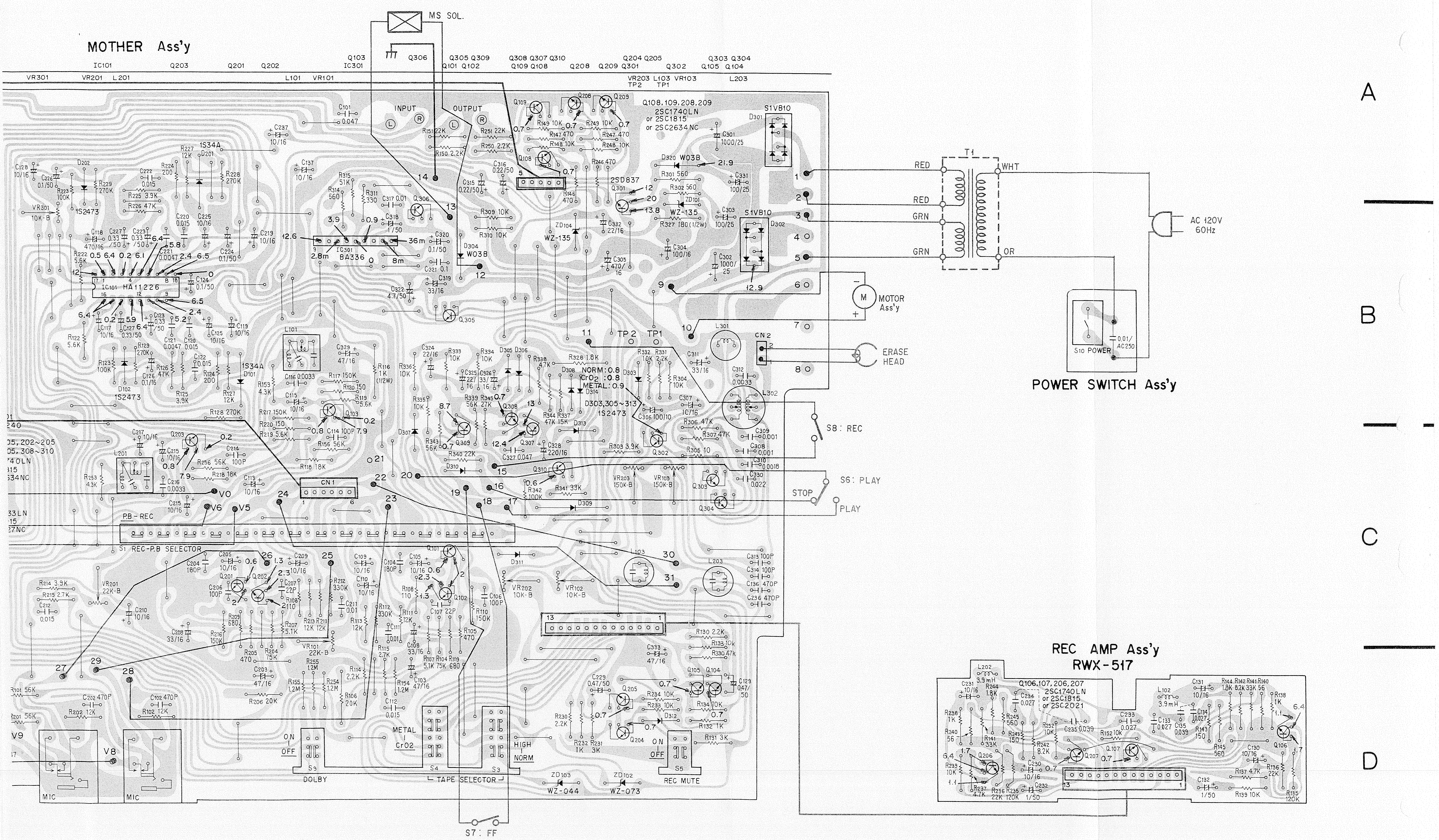
Mark	Part No.	Symbol & Description
	RD¼PM□□□J	R501–R508
	RD½PSF□□□J	R509, R510

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	BA6124	IC501, IC502
	LN10157P	LED501
	GL-9PR9	LED502, LED503

8. P.C. BOARD CONNECTION DIAGRAM

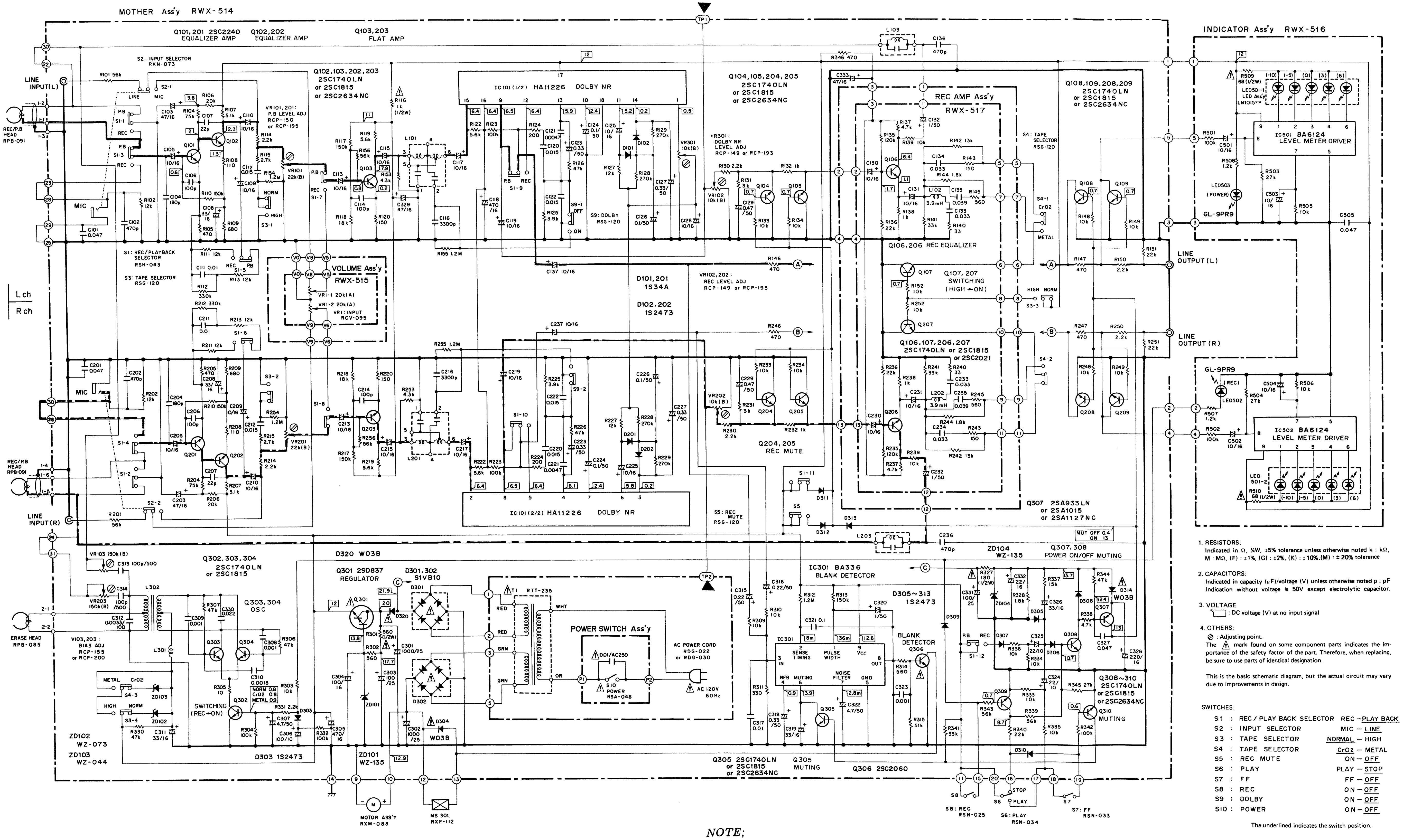

1 2 3 4 5 6
A
B
C
D
MOTHER Ass'y
INDICATOR Ass'y
IC502 BA6124
IC501 BA6124
LED503 (POWER)
LED502 (REC)
LED502,503 GL-9PR9
LED501 LN10157P
(6) (3) (0) (-5) (-10)
VOLUME Ass'y
RWX-515
V9 V10 V0
V8 V5 V6
INPUT
VR1 20K
CN1
L CH
REC/P.B HEAD
R CH
MS SOL.
INPUT
OUTPUT
IC101 HA11226
IC301 BA336
Q101, 201 2SC2240
Q102~105, 202~205 Q302~305, 308~310 2SC1740LN or 2SC1815 or 2SC2634NC
Q307 2SA433LN or 2SA1015 or 2SA1127NC
Q108, 109, 208, 209 2SC1740LN or 2SC1815 or 2SC2634NC
2SD837
D303,305~313 1S2473
NORM: 0.8 CrO2: 0.8 METAL: 0.9
PB - REC
S1 REC-P.B SELECTOR
MIC
MIC
ON OFF
S9 DOLBY
METAL CrO2
S4 TAPE SELECTOR S3
HIGH NORM
S5 REC MUTE
ZD103 WZ-044
ZD102 WZ-073
S7 : FF
TP2 TP1
L101 L201 L103 L203 L301
VR101 VR102 VR103 VR201 VR202 VR203 VR301



4
5
6
7
8
9
A
B
C
D
MOTHER Ass'y
MS SOL.
IC101
Q203
Q201
Q202
Q103
IC301
Q306
Q305 Q309
Q101 Q102
Q308 Q307 Q310
Q109 Q108
Q208
Q209 Q301
Q204 Q205
Q302
Q303 Q304
Q105 Q104
VR301
VR201
L201
L101
VR101
VR203 L103 VR103
TP2 TP1
L203
Q108,109,208,209
2SC1740LN
or 2SC1815
or 2SC2634NC
INPUT
OUTPUT
HA11226
8A336
2SD837
S1VB10
W03B
WZ-135
T1
RED
RED
GRN
GRN
WHT
OR
AC 120V
60Hz
MOTOR Ass'y
ERASE HEAD
CN2
CN1
S10 POWER
0.01/AC250
POWER SWITCH Ass'y
S8 : REC
S6 : PLAY
STOP
PLAY
NORM : 0.8
CrO2 : 0.8
METAL : 0.9
D303,305~313
1S2473
1S34A
PB-REC
S1 REC-P.B SELECTOR
DOLBY
ON
OFF
S3
METAL
CrO2
S4
TAPE SELECTOR
HIGH
NORM
S5
REC MUTE
ZD103
WZ-044
ZD102
WZ-073
S7 : FF
MIC
MIC
V0
V5
V6
V8
V9
REC AMP Ass'y
RWX-517
Q106,107,206,207
2SC1740LN
or 2SC1815
or 2SC2021

9. SCHEMATIC DIAGRAM

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.


1
2
3
4
5
6
A
B
C
D
MOTHER Ass'y RWX-514
Q101,201 2SC2240 EQUALIZER AMP
Q102,202 EQUALIZER AMP
Q103,203 FLAT AMP
Q102,103,202,203 2SC1740LN or 2SC1815 or 2SC2634NC
S2 : INPUT SELECTOR RKN-073
IC101 (1/2) HA11226 DOLBY NR
IC101 (2/2) HA11226 DOLBY NR
Q104,105,204,205 2SC1740LN or 2SC1815 or 2SC2634NC
REC AMP Ass'y RWX-517
Q106,206 REC EQUALIZER
Q107,207 SWITCHING (HIGH→ON)
Q106,107,206,207 2SC1740LN or 2SC1815 or 2SC2021
Q108,109,208,209 2SC1740LN or 2SC1815 or 2SC2634NC
INDICATOR Ass'y RWX-516
IC501 BA6124 LEVEL METER DRIVER
IC502 BA6124 LEVEL METER DRIVER
LINE INPUT(L)
LINE INPUT(R)
REC/P.B HEAD RPB-091
MIC
S1 : REC/PLAYBACK SELECTOR RSH-043
S3 : TAPE SELECTOR RSG-120
VOLUME Ass'y RWX-515
VR1 : INPUT RCV-095
VR101,201 : P.B LEVEL ADJ RCP-150 or RCP-195
VR301 : DOLBY NR LEVEL ADJ RCP-149 or RCP-193
VR102,202 : REC LEVEL ADJ RCP-149 or RCP-193
S9 : DOLBY RSG-120
S4 : TAPE SELECTOR RSG-120
D101,201 1S34A
D102,202 1S2473
Q204,205 REC MUTE
S5 : REC MUTE RSG-120
LINE OUTPUT (L)
LINE OUTPUT (R)
Q307 2SA933LN or 2SA1015 or 2SA1127NC
Q307,308 POWER ON/OFF MUTING
ZD104 WZ-135
ERASE HEAD RPB-085
VR103,203 : BIAS ADJ RCP-155 or RCP-200
Q302,303,304 2SC1740LN or 2SC1815
Q303,304 OSC
Q302 SWITCHING (REC→ON)
ZD102 WZ-073
ZD103 WZ-044
D303 1S2473
D320 W03B
Q301 2SD837 REGULATOR
D301,302 S1VB10
ZD101 WZ-135
T1 RTT-235
POWER SWITCH Ass'y
S10 POWER RSA-048
AC POWER CORD RDG-022 or RDG-030
AC 120V 60Hz
IC301 BA336 BLANK DETECTOR
D305~313 1S2473
Q306 BLANK DETECTOR
Q305 2SC1740LN or 2SC1815 or 2SC2634NC
Q305 MUTING
Q306 2SC2060
Q308~310 2SC1740LN or 2SC1815 or 2SC2634NC
Q310 MUTING
MOTOR ASS'Y RXM-088
MS SOL RXP-112
S8 : REC RSN-025
S6 : PLAY RSN-034
S7 : FF RSN-033
TP1
TP2
Lch
Rch
GL-9PR9
MUT OFF 0.4 ON 13

1. RESISTORS:
   Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%,(M) : ± 20% tolerance

2. CAPACITORS:
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
   Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE
   ▭ : DC voltage (V) at no input signal

4. OTHERS:
   ⊘ : Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

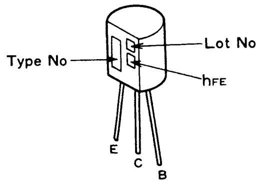
S1	:	REC / PLAY BACK SELECTOR	REC – PLAY BACK
S2	:	INPUT SELECTOR	MIC – LINE
S3	:	TAPE SELECTOR	NORMAL – HIGH
S4	:	TAPE SELECTOR	CrO2 – METAL
S5	:	REC MUTE	ON – OFF
S6	:	PLAY	PLAY – STOP
S7	:	FF	FF – OFF
S8	:	REC	ON – OFF
S9	:	DOLBY	ON – OFF
S10	:	POWER	ON – OFF

The underlined indicates the switch position.

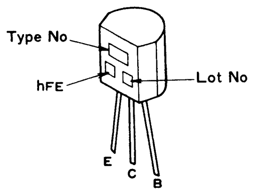
NOTE;
Play back signal route ————
Recording signal route — — —

External Appearance of Transistors and ICs

2SA1015
2SC1815
2SC2240


Lot No
Type No
hFE
E
C
B

2SC2060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Lot No
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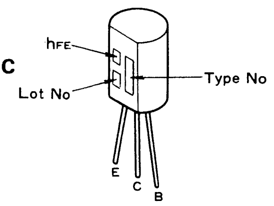
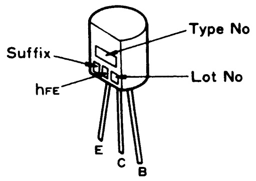
C
B

2SC1383NC


hFE
Lot No
Type No
E
C
B

2SA933LN
2SC1740LN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Suffix
Lot No
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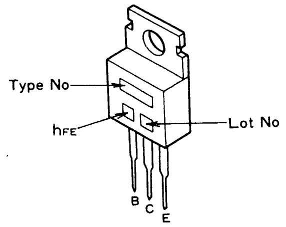
E
C
B

2SD837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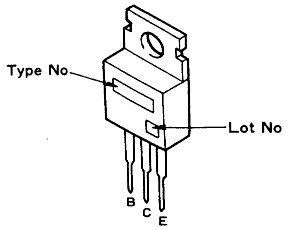
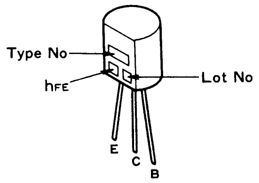
Lot No
B
C
E

2SD686


Type No
Lot No
B
C
E

2SA1127NC
2SC2634NC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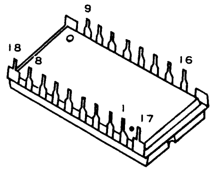
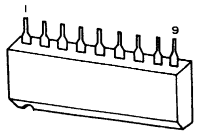
Lot No
E
C
B

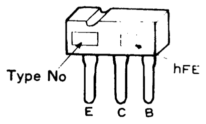
HA11226



BA338
BA6124



2SC2021
2SA937


Type No
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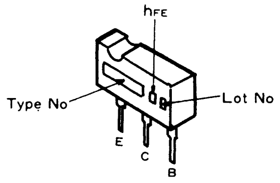
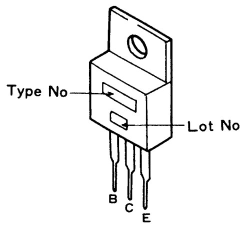
E
C
B

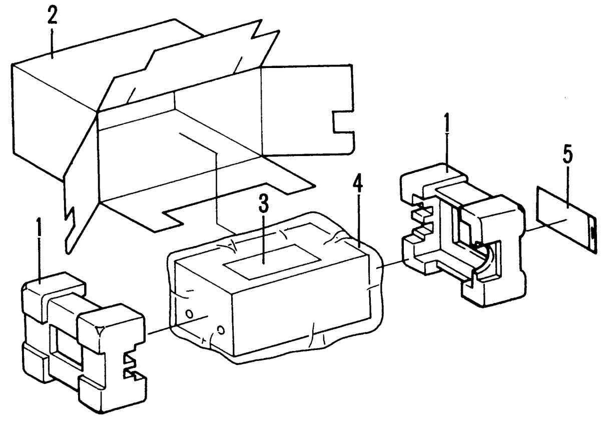
2SC2673


hFE
Type No
Lot No
E
C
B

2SD1013


Type No
Lot No
B
C
E

10. PACKING



Parts List

Mark	No.	Part No.	Description
	1.	RHA-235	Pad
	2.	RHG-430	Packing case
	3.	RRB-150	Operating instructions
	4.	RHX-031	Sheet C
	5.	RDE-010	Connection cord

11. MECHANICAL ADJUSTMENTS

Prior to adjustment

Clean the both reel base, the capstan and the pinch roller with an alcohol moistened swab.

11.1 PINCH ROLLER PRESSURE ADJUSTMENT

1. Put the tape deck into the playback mode.
2. Gently push against the pinch roller arm with the tension gauge and separate the pinch roller slightly from the capstan.
3. Then the pinch roller back onto the capstan, and read the value when the pinch roller starts to rotate. If the reading fails to lie within 350g ~ 550g, replace the pinch pressure spring.

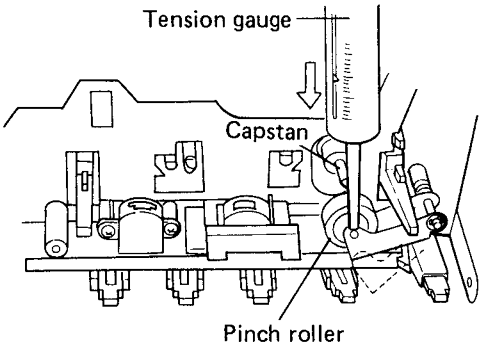


Fig. 11-1 Pinch roller pressure adjustment

11.2 REEL BASE TORQUE ADJUSTMENT

Measure the torque with the torque meter during playback, fast forward (FF) and rewind (REW) modes. The measured values should normally lie within the allowable ranges listed in the table 1.

If the measured values lie outside the relevant ranges, replace the TU (take-up) reel base assembly and/or supply reel base assembly, TU idler, or drive arm full assembly.

Table 1

	TU reel base	Supply reel base
Playback mode	35 – 55g.cm	* 2 – 5g.cm
FF mode	75 – 110g.cm	* 2 – 5g.cm
REW mode	* 2 – 5g.cm	75 – 110g.cm

** Do notes back tension torque*

11.3 TAPE SPEED ADJUSTMENT

1. Connect the frequency counter to the LINE OUTPUT terminals.
2. Playback the 3kHz portion of the STD-301 test tape. At the beginning, the frequency should be lie within the 2995Hz ~ 3010Hz range, and may be adjusted by turning the semi-fixed resistor located in the capstan motor adjustment hole as shown in Fig. 11-2.

Tape speed is increased by turning the semi-fixed resistor clockwise, and decreased by turning counter-clockwise.

11.4 REC SWITCH ADJUSTMENT

1. Depress REC button. REC action lever moves to Ⓐ direction. At this time, check that REC switch is ON.
2. Depress STOP button. The REC action lever moves slightly to Ⓑ direction. At this time, bend and adjust the REC action lever so that a contact distance of REC switch is 0.2 ~ 0.5 mm.

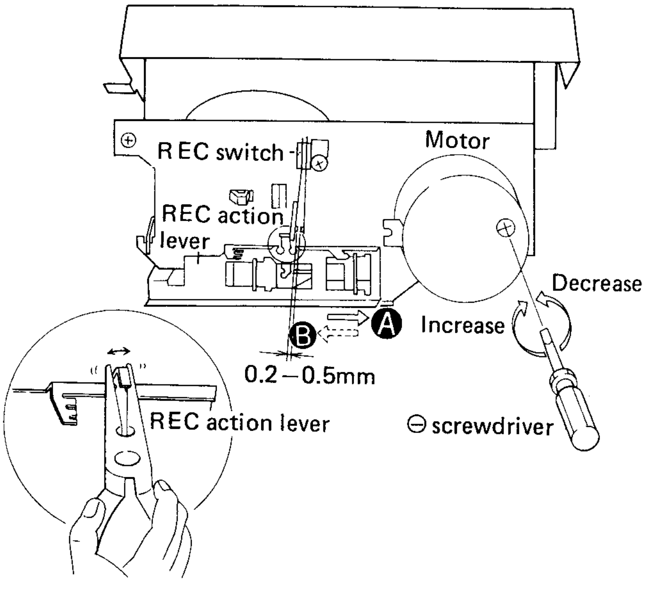


Fig. 11-2 Tape speed and REC switch adjustment

11. RÉGLAGES MÉCANIQUES

Avant de procéder au réglage

Nettoyer les deux supports de bobine, le cabestan et le galet presseur à l'aide d'un bâtonnet imbibé d'alcool.

11.1 RÉGLAGE DE LA FORCE D'APPUI DU GALET PRESSEUR

1. Mettre la platine en mode de lecture.
2. Appuyer doucement sur le bras du galet presseur à l'aide d'une jauge de pression et séparer légèrement le galet presseur du cabestan.
3. Laisser ensuite revenir le galet presseur sur le cabestan et lire la valeur lorsque le galet presseur commence à tourner. Si la valeur lue ne se situe pas entre 350g et 550g, remplacer le ressort du galet presseur.

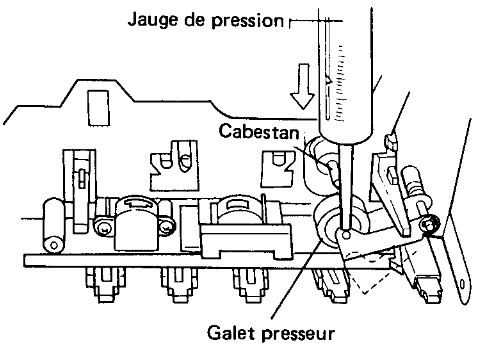


Fig. 11-1 Réglage de la force d'appui du galet presseur

11.2 RÉGLAGE DU COUPLE DU SUPPORT DE BOBINE

Mesurer le couple à l'aide d'un dynamomètre dans les modes de lecture, d'avance rapide (FF) et de rebobinage (REW). Les valeurs mesurées doivent normalement se situer dans les limites admissibles données au tableau 1.

Si les valeurs mesurées se trouvent en dehors des plages indiquées, remplacer l'ensemble support de bobine TU (réception) et/ou l'ensemble support de bobine débiteur, la poulie libre TU ou l'ensemble complet du bras d'entraînement.

Tableau 1

	Support de bobine TU	Support de bobine débitrice
Mode de lecture	35 à 55g.cm	• 2 à 5g.cm
Mode FF	75 à 110g.cm	• 2 à 5g.cm
Mode REW	• 2 à 5g.cm	75 à 110g.cm

• *Couple de tension inverse*

11.3 RÉGLAGE DE LA VITESSE DE DEFILEMENT DE LA BANDE

1. Raccorder le fréquencemètre aux bornes de sortie LINE OUTPUT.
2. Reproduire la partie à 3kHz de la bande d'essai STD-301. Au début, la fréquence doit se situer dans la plage de 2995Hz à 3010Hz, et elle peut être réglée en tournant la résistance ajustable située dans le trou de réglage du moteur-cabestan, comme indiqué à la figure 11-2.

La vitesse de défilement de la bande augmente lorsque la résistance ajustable est tournée dans le sens des aiguilles d'une montre, et elle décroît lorsque l'on tourne la résistance en sens inverse.

11.4 RÉGLAGE DU COMMUTATEUR D'ENREGISTREMENT (REC)

1. Appuyer sur la touche d'enregistrement (REC). Le levier de commande REC se déplace dans la direction Ⓐ.
2. Appuyer sur la touche d'arrêt (STOP). Le levier de command REC se déplace légèrement dans la direction Ⓑ. Courber et ajuster alors le levier de commande REC, de manière à ce que la course de contact du commutateur d'enregistrement soit de 0,2 à 0,5mm.

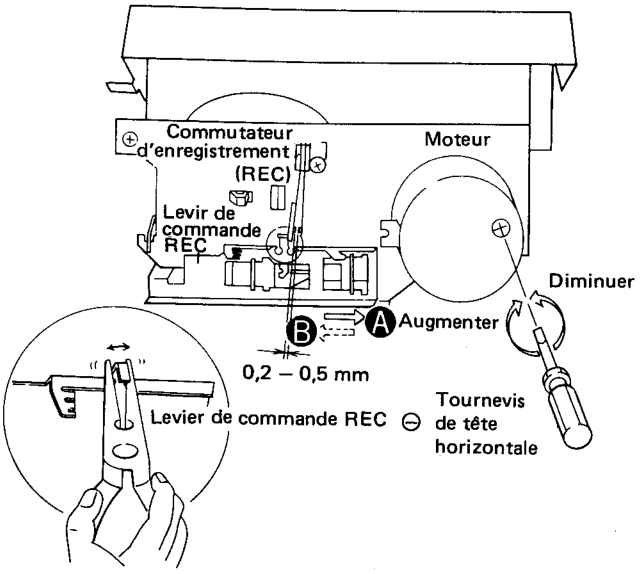


Fig. 11-2 Réglage de la vitesse de defilement de la bande et du commutateur d'enregistrement (REC)

11. AJUSTES MECÁNICOS

Antes del ajuste

Limpiar ambas bases de los carretes, eje de arrastre y rodillo de presión con algodón humedecido en alcohol.

11.1 AJUSTE DE LA PRESIÓN DEL RODILLO DE PRESIÓN

1. Establecer el magnetófono en el modo de reproducción.
2. Con el calibrador de tensión presionar ligeramente contra el brazo del rodillo de presión y separar un poco dicho rodillo del eje de arrastre.
3. Luego reposicionar el rodillo de presión sobre el eje de arrastre, y leer el valor en el momento en que el rodillo de presión empieza a girar. Si la indicación cae dentro de 350g ~ 550g, reemplazar el muelle del rodillo de presión.

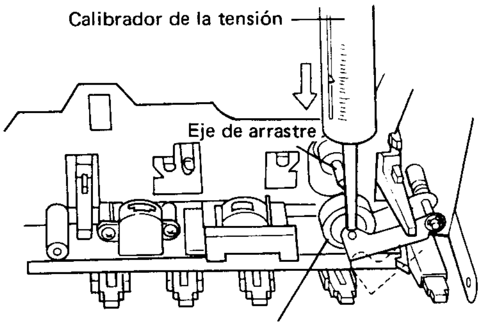


Fig. 11-1 Ajuste de la presión del rodillo de presión

11.2 AJUSTE DE LA TORSIÓN DE LA BASE DEL CARRETE

Utilizar el modidor de torsión para medir la torsión durante las funciones de reproducción, avance rápido (FF) y rebobinado (REW). Los valores medidos deberán estar normalmente dentro de los límites permisibles enumerados en la tabla 1.

Si los valores medidos no están dentro de tales límites, reemplazar el conjunto de la base del carrete de arrastre (TU) y/o conjunto de la base del carrete de suministro, rueda de guía TU, o todo el conjunto del brazo de arrastre.

Tabla 1

	Base del carrete TU	Base del carrete de suministro
Modo de reproducción	35 – 55g.cm	• 2 – 5g.cm
Modo de avance rápido	75 – 110g.cm	• 2 – 5g.cm
Modo de rebobinado	• 2 – 5g.cm	75 – 110g.cm

- *Las notas se apoyan en la torsión de la tensión*

11.3 AJUSTE DE LA VELOCIDAD DE LA CINTA

1. Conectar el frecuencímetro a los terminales de salida de línea (LINE OUTPUT).
2. Reproducir la parte de 3kHz de la cinta de prueba STD-301. Al principio, la frecuencia deberá estar entre 2995Hz ~ 3010Hz, y podrá ajustarse girando el resistor semifijo, situado en el orificio de ajuste del motor del eje de arrastre, como se muestra en la figura 11-2.

La velocidad de la cinta aumentará girando hacia la derecha el resistor semifijo, y se reducirá girándolo hacia la izquierda.

11.4 AJUSTE DEL INTERRUPTOR DE GRABACIÓN (REC)

1. Presionar el botón REC. La palanca de accionamiento de REC se mueve en la dirección Ⓐ. Entonces, comprobar que el interruptor REC esté en la posición ON.
2. Presionar el botón de parada (STOP). La palanca de accionamiento de REC se mueve ligeramente en la dirección Ⓑ. Entonces, doblar y ajustar la palanca de accionamiento de REC de modo que la distancia de contacto del interruptor REC sea de 0,2 ~ 0,5mm.

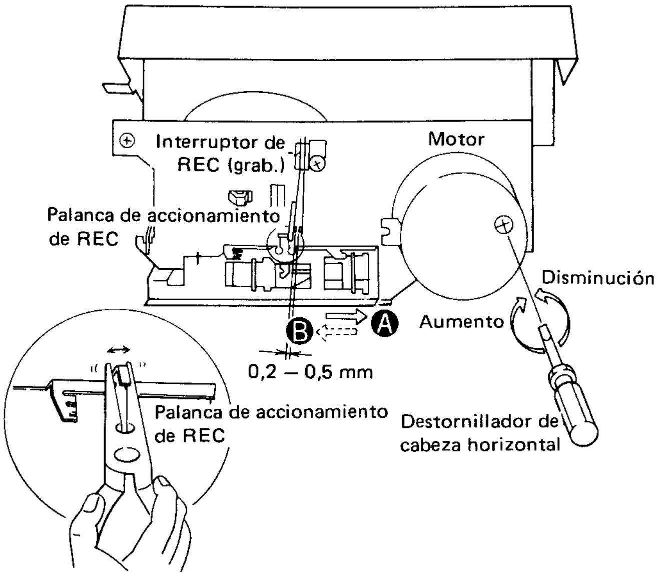

Interruptor de REC (grab.)
Motor
Palanca de accionamiento de REC
Disminución
Aumento
Ⓑ
Ⓐ
0,2 – 0,5 mm
Palanca de accionamiento de REC
Destornillador de cabeza horizontal

Fig. 11-2 Ajuste de la velocidad de la cinta y del interruptor de grabación (REC)

12. ELECTRICAL ADJUSTMENTS

Precaution

1. Mechanical adjustment should be completed.
2. Clean the following parts with an alcohol moistened swab: Record/Playback head, Pinch roller, Erase head, Rubber belts and Capstan.
3. Demagnetize record/playback head with a head demagnetizer.
4. Do not use magnetized screwdriver for adjustments.
5. Adjustments and measurements should be performed for both L ch and R ch with rated power supply voltage.
6. Adjustments should be performed in the order given in this service manual. Altering the order can hinder proper adjustments, resulting in loss of performance.
7. Level during measurements are based on 0dBv = 1V. Connect a 50kΩ (47 – 52kΩ) dummy resistor across the OUTPUT terminals.
8. Let the CT-320 warm up (aging) for a few minutes before proceeding with the adjustment.
9. Set the DOLBY NR switch to OFF and TAPE SELECTOR to the NORM position unless directed otherwise.

Test Equipments/Tools Required:

1. Test tape
   - STD-341A .... For playback adjustment
   - STD-608A .... NORMAL blank tape
   - STD-603 .... CrO2 blank tape
   - STD-604 .... METAL blank tape
2. Audio oscillator
3. AC millivoltmeter (AC mV)
4. Attenuator
5. Oscilloscope
6. Resistor 50kΩ (47 – 52kΩ)

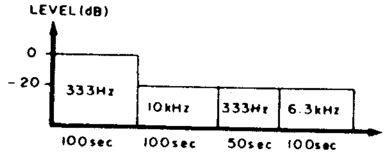


Fig. 12-1 Contents of the test tape STD-341A

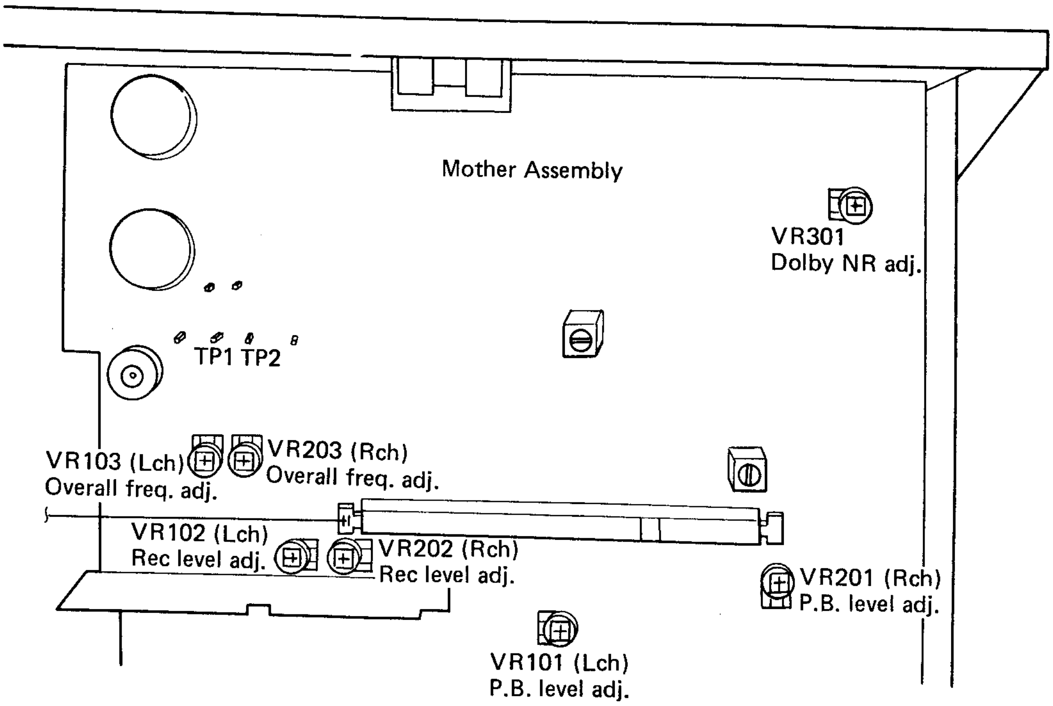

Mother Assembly
VR301
Dolby NR adj.
TP1 TP2
VR103 (Lch)
Overall freq. adj.
VR203 (Rch)
Overall freq. adj.
VR102 (Lch)
Rec level adj.
VR202 (Rch)
Rec level adj.
VR201 (Rch)
P.B. level adj.
VR101 (Lch)
P.B. level adj.

Fig. 12-2 Adjustment points

12.1 DOLBY NR ADJUSTMENT

Setting

Mode	Record
AC mV meter	TP1 (L ch) and TP2 (R ch) of the mother assembly
Input Signal	2kHz, -10dBv (316 mV) to LINE INPUT

Procedure

1. Adjust the INPUT level control so that the AC mV meter reads -2.2dBv (776 mV).
2. Next change the input signal level to -30dBv (31.6 mV) and DOLBY NR switch to the ON position.
3. Adiust the VR301 so that the AC mV meter reads -17.9dBv (127 mV).

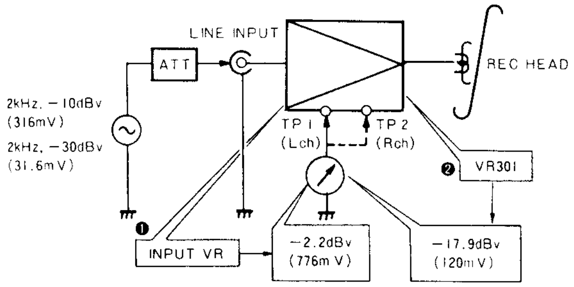

LINE INPUT
ATT
REC HEAD
2kHz, −10dBv (316mV)
2kHz, −30dBv (31.6mV)
TP 1 (Lch)
TP 2 (Rch)
❷ VR301
❶ INPUT VR
−2.2dBv (776mV)
−17.9dBv (120mV)

Fig. 12-3 Dolby NR adjustment

12.2 HEAD AZIMUTH ADJUSTMENT

Setting

Mode	Playback
Test Tape	STD-341A (10kHz, -20dB)
AC mV meter	LINE OUTPUT
VR101, VR201	Turn up to maximum position

Procedure

Adjust the azimuth adjusting screw for maximum AC mV meter readings for both L and R channels. After this adjustment, lock the screw with **screw lock**.

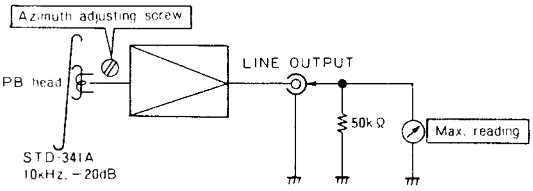

Azimuth adjusting screw
PB head
LINE OUTPUT
50k Ω
Max. reading
STD-341A
10kHz, −20dB

Fig. 12-4 Head azimuth adjustment

12.3 PLAYBACK EQUALIZER ADJUSTMENT

Setting

Mode	Playback
Test Tape	STD-341A (333Hz and 6.3kHz, -20dB)
AC mV meter	LINE OUTPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position. Play back the 333Hz and 6.3kHz portions of the STD-341A, and check that difference between the two output levels does not exceed 0dB±1dB.
2. Next set the TAPE SELECTOR to the HIGH position. Play back the 333Hz and 6.3kHz portions again, and check that the difference between the two output levels does not exceed -4dB±1dB.

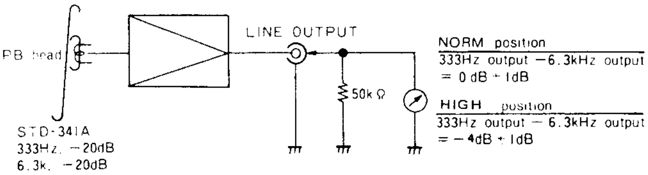

PB head
LINE OUTPUT
50k Ω
NORM position
333Hz output −6.3kHz output = 0 dB ± 1dB
HIGH position
333Hz output − 6.3kHz output = −4dB ± 1dB
STD-341A
333Hz, −20dB
6.3k, −20dB

Fig. 12-5 Playback equalizer check

12.4 PLAYBACK LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during playback, it should be performed precisely.

Setting

Mode	Playback
Test Tape	STD-341A (333Hz, 0dB)
AC mV meter	TP1 (L ch) and TP2 (R ch) of the mother assembly

Procedure

Adjust the VR101 (L ch) and VR201 (R ch) so that the AC mV meter reads -1.2 dBv (0.87V).

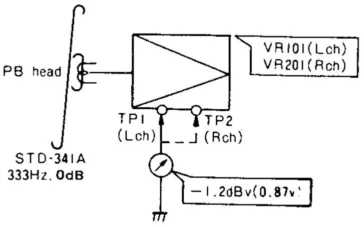

PB head
VR101(Lch)
VR201(Rch)
TP1 (Lch)
TP2 (Rch)
STD-341A
333Hz, 0dB
−1.2dBv(0.87v)

Fig. 12-6 Playback level adjustment

12.5 LEVEL METER CHECK

Setting

Mode .... Record
Input signal .... 333Hz, -10dBv (316mV) to LINE INPUT
AC mV meter .... TP1 (Lch) and TP2 (Rch) of the mother assembly

Procedure

Adjust the INPUT level control so that the AC mV meter reads -5.2dBv (0.54V). Then check the level meter reads 0dB.

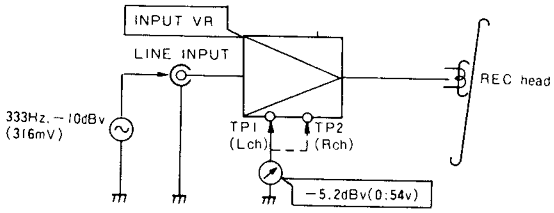

INPUT VR
LINE INPUT
333Hz, -10dBv (316mV)
TP1 (Lch)
TP2 (Rch)
REC head
-5.2dBv(0.54v)

Fig. 12-7 Level meter check

12.6 OVERALL FREQUENCY RESPONSE ADJUSTMENT

Setting

Mode .... Record
Test Tape STD-608A
AC mV meter .... LINE OUTPUT
Input Signal .... 333Hz, -30dBv (31mV) to LINE INPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position.
2. Adjust the INPUT level control so that the AC mV meter reads -27dBv (44.6 mV).
3. Record the 333Hz and 6.3kHz signals onto the STD-608A. Play back the tape and adjust the VR103 (L ch) and VR203 (R ch) so that the difference between two is 0.5dB $^{+1}_{-0.5}$dB.

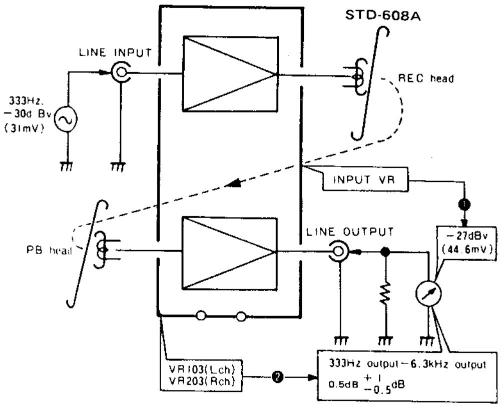

STD-608A
LINE INPUT
333Hz, -30d Bv (31mV)
REC head
INPUT VR
PB head
LINE OUTPUT
-27dBv (44.6mV)
VR103(Lch)
VR203(Rch)
333Hz output - 6.3kHz output
0.5dB $^{+1}_{-0.5}$dB

Fig. 12-8 Overall frequency response adjustment

12.7 RECORD LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during reocrding, it should be performed precisely.

Setting

Mode .... Record
Test Tape STD-608A, STD-603, STD-604
AC mV meter .... TP1 (L ch) and TP2 (R ch) of the mother assembly
Input Signal .... 333Hz, -10dBv (316mV) to LINE INPUT

Procedure

1. Set the TAPE SELECTOR to the NORM position.
2. Adjust the INPUT level control so that the AC mV meter reads -5.2dBv (0.54V).
3. Next set the DOLBY NR switch to the ON position.
4. Record the 333Hz signal onto the STD-608A. Playback the tape and adjust the VR102 (L ch) and VR202 (R ch) so that the AC mV meter reads -5.2dBv (0.54V).
5. Set the TAPE SELECTOR to the CrO2 position and record the 333Hz signal onto the STD-603. Play back the tape and check that the AC mV meter reads -5.2dBv (0.54V) ±1.5dB.
6. Next set the TAPE SELECTOR to the METAL position and record the 333Hz signal onto the STD-604. Play back the tape and check that the AC mV meter reads -5.2dBv (0.54V) ±1.5dB.

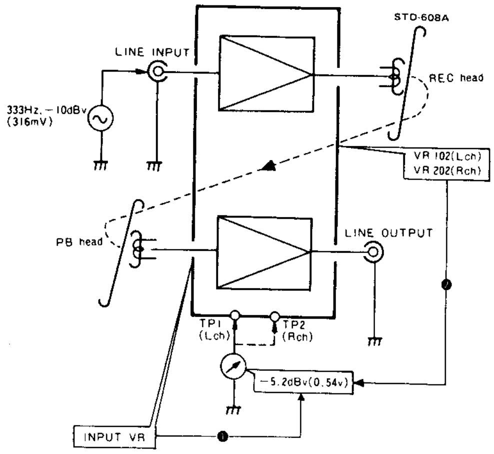
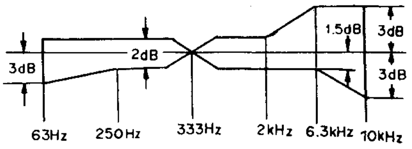

STD-608A
LINE INPUT
333Hz, -10dBv (316mV)
REC head
VR 102(Lch)
VR 202(Rch)
PB head
LINE OUTPUT
TP1 (Lch)
TP2 (Rch)
-5.2dBv(0.54v)
INPUT VR

Fig. 12-9 Recording level adjustment

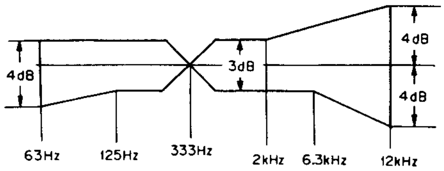
Frequency Response

Using STD-341A and the TAPE SELECTOR NORM position, with DOLBY NR OFF
However, the right channel is compensated by —1dB at 63Hz, and —0.5dB at 125Hz because of the insulation effect.

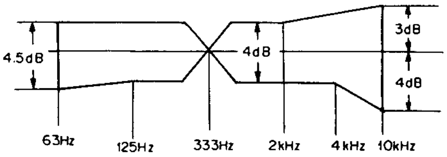


Overall Frequency Response

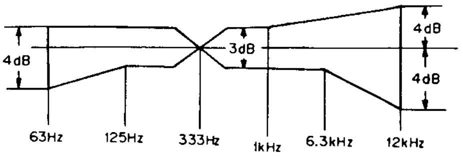
Using STD-608A and TAPE SELECTOR NORM position, with DOLBY NR OFF



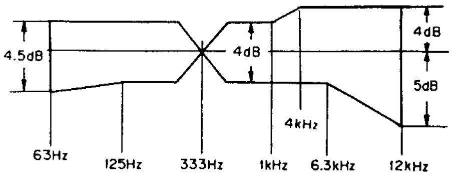
Using STD-608A and TAPE SELECTOR NORM position, with DOLBY NR ON



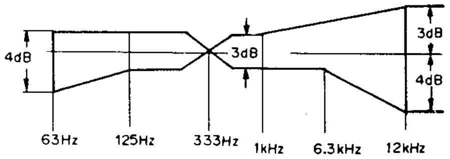
Using STD-603 and TAPE SELECTOR CrO_2 position, with DOLBY NR OFF



Using STD-603 and TAPE SELECTOR CrO_2 position, with DOLBY NR ON



Using STD-604 and TAPE SELECTOR METAL position, with DOLBY NR OFF



Using STD-604 and TAPE SELECTOR METAL position, with DOLBY NR ON

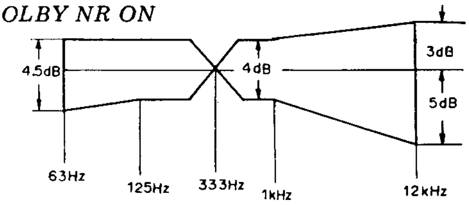


Fig. 12-10 Frequency response

12. RÉGLAGES ÉLECTRIQUES

Précautions

1. Les réglages mécaniques doivent être terminés.
2. Nettoyer les pièces suivantes à l'aide d'un bâtonnet imbibé d'alcool: tête d'enregistrement/lecture, galet presseur, tête d'effacement, courroies en caoutchouc et cabestan.
3. Démagnétiser la tête d'enregistrement/lecture à l'aide d'un démagnétiseur de tête.
4. Ne pas utiliser de tournevis magnétisé pour les réglages.
5. Les réglages et les mesures doivent être réalisés pour les canaux de gauche et de droite avec la tension d'alimentation nominale.
6. Les réglages doivent être effectués dans l'ordre indiqué dans ce manuel de service. Une modification de cet ordre peut empêcher la réalisation de réglages corrects et peut provoquer une baisse de performance.
7. Les niveaux en cours de mesure sont basés sur 0dBv = 1V. Raccorder une charge fictive de 50 kΩ (47 à 52 kΩ) entre les bornes de sortie (OUTPUT).
8. Laisser chauffer (vieillissement) le CT-320 pendant quelques minutes avant de procéder aux réglages.
9. Placer le commutateur DOLBY NR sur OFF et le sélecteur TAPE SELECTOR sur la position NORM, sauf indication contraire.

Equipements/outils d'essai requis

1. Bande d'essai
   STD-341A .... Pour le réglage de la reproduction
   STD-608A .... Bande "NORMAL" vierge
   STD-603 .... Bande "CrO2" vierge
   STD-604 .... Bande "METAL" vierge
2. Oscillateur BF
3. Millivoltmètre alternatif (mV CA)
4. Atténuateur
5. Oscilloscope
6. Résistance 50 kΩ (47 à 52 kΩ)

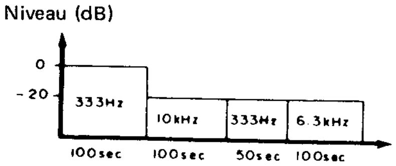


Fig. 12-1 Contenu de la bande d'essai STD-341A

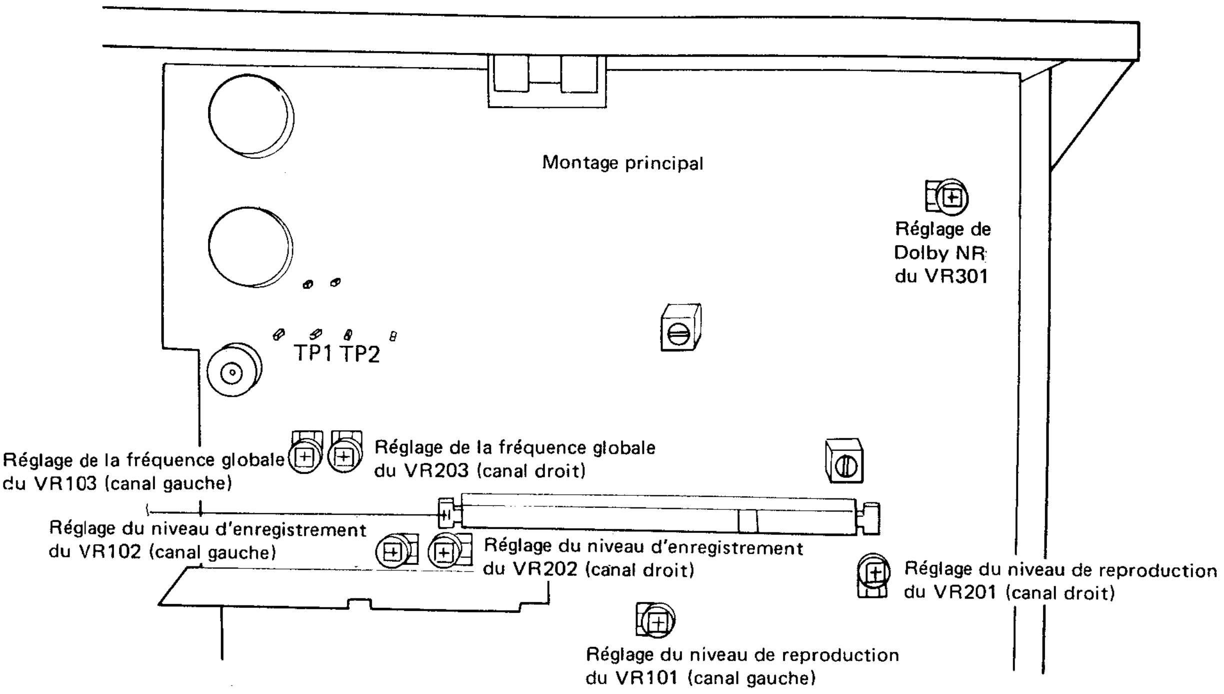

Montage principal
Réglage de Dolby NR du VR301
TP1 TP2
Réglage de la fréquence globale du VR103 (canal gauche)
Réglage de la fréquence globale du VR203 (canal droit)
Réglage du niveau d'enregistrement du VR102 (canal gauche)
Réglage du niveau d'enregistrement du VR202 (canal droit)
Réglage du niveau de reproduction du VR201 (canal droit)
Réglage du niveau de reproduction du VR101 (canal gauche)

Fig. 11-2 Points de réglage

12.1 RÉGLAGE DU CIRCUIT DOLBY NR

Préparation

Mode	Enregistrement
Millivoltmètre CA	TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal
Signal d'entrée	2kHz, - 10dBv (316mV) à LINE INPUT

Procédure

1. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique - 2,2dBv (776mV).
2. Faire ensuite passer le niveau du signal d'entrée à - 30dBv (31,6mV) et placer le commutateur DOLBY NR sur la position ON.
3. Régler VR301 de manière à ce que le millivoltmètre CA indique - 17,9dBv (127mV).

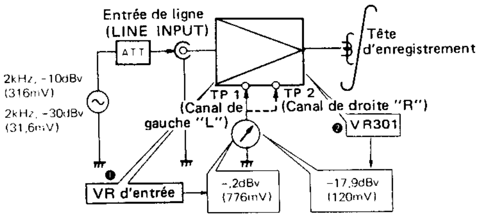

Entrée de ligne
(LINE INPUT)
ATT
Tête
d'enregistrement
2kHz, -10dBv
(316mV)
2kHz, -30dBv
(31,6mV)
TP 1
TP 2
(Canal de gauche "L")
(Canal de droite "R")
❷ VR301
❶ VR d'entrée
-,2dBv
(776mV)
-17,9dBv
(120mV)

Fig. 12-3 Réglage du circuit Dolby NR

12.2 RÉGLAGE EN AZIMUT DE LA TÊTE

Préparation

Mode	Lecture
Bande d'essai	STD-341A (10kHz, - 20dB)
Millivoltmètre CA	A la sortie de ligne (LINE OUTPUT)
VR101, VR201	Tournées en position maximum

Procédure

Régler la vis de réglage d'azimut de manière à obtenir l'indication maximum du millivoltmètre CA pour les canaux de gauche et de droite. Lorsque ce réglage est terminé, verrouiller la vis à l'aide du blocage de vis.

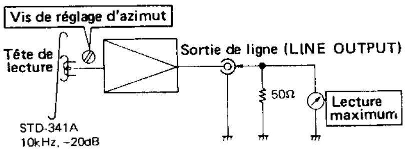

Vis de réglage d'azimut
Tête de
lecture
Sortie de ligne (LINE OUTPUT)
50Ω
Lecture
maximum
STD-341A
10kHz, -20dB

Fig. 12-4 Réglage d'azimut de la tête

12.3 RÉGLAGE DE L'ÉGALISATION DE LECTURE

Préparation

Mode	Lecture
Bande d'essai	STD-341A (333Hz et 6,3kHz, - 20dB)
Millivoltmètre CA	Sortie de ligne (LINE OUTPUT)

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM. Procéder à la reproduction des passages de 333Hz et de 6,3kHz de la bande STD-341A et vérifier que la différence entre les deux niveaux de sortie n'excède pas 0dB ± 1dB.
2. Placer ensuite le sélecteur TAPE SELECTOR sur la position HIGH. Procéder de nouveau à la reproduction des passages de 333Hz et de 6,3kHz et vérifier que la différence entre les deux niveaux de sortie n'excède pas - 4dB ±1dB.

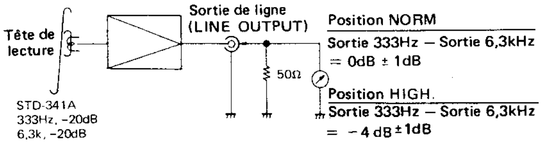

Tête de
lecture
Sortie de ligne
(LINE OUTPUT)
50Ω
STD-341A
333Hz, -20dB
6,3k, -20dB
Position NORM
Sortie 333Hz – Sortie 6,3kHz
= 0dB ± 1dB
Position HIGH.
Sortie 333Hz – Sortie 6,3kHz
= -4 dB ± 1dB

Fig. 12-5 Contrôle de l'égalisation de lecture

12.4 RÉGLAGE DU NIVEAU DE LECTURE

Ce réglage déterminant le niveau de DOLBY NR pendant la lecture, il doit être réalisé avec précision.

Préparation

Mode	Lecture
Bande d'essai	STD-341A (333Hz, 0dB)
Millivoltmètre CA	TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal

Procédure

Régler VR101 (canal de gauche) et VR201 (canal de droite), de manière à ce que le millivoltmètre CA indique - 1,2dBv (0,87V).

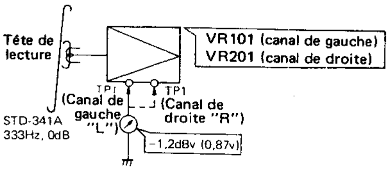

Tête de
lecture
VR101 (canal de gauche)
VR201 (canal de droite)
TP1
(Canal de gauche "L")
TP1
(Canal de droite "R")
STD-341A
333Hz, 0dB
-1,2dBv (0,87v)

Fig. 12-6 Réglage du niveau de lecture

12.5 CONTRÔLE DE L'INDICATEUR DE NIVEAU

Préparation

Mode	Enregistrement
Signal d'entrée	333Hz, - 10dBv (316mV) à l'entrée de ligne LINE INPUT
Millivoltmètre CA	TP1 (canal de gauche) et TP2 (canal de droite) de l'ensemble principal

Procédure

Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique - 5,2dBv (0,54V). Contrôler ensuite que l'indicateur de niveau affiche 0dB.

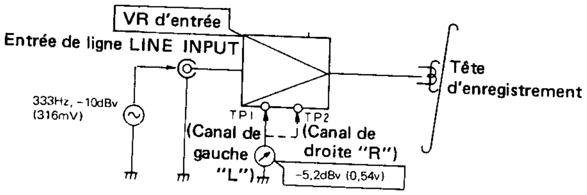

VR d'entrée
Entrée de ligne LINE INPUT
333Hz, -10dBv
(316mV)
TP1
TP2
(Canal de gauche "L")
(Canal de droite "R")
-5,2dBv (0,54v)
Tête d'enregistrement

Fig. 12-7 Contrôle de l'indicateur de niveau

12.6 RÉGLAGE DE LA RÉPONSE EN FRÉQUENCE GLOBALE

Préparation

Mode	Enregistrement
Bande d'essai	STD-608A
Millivoltmètre CA	Sortie de ligne LINE OUTPUT
Signal d'entrée	333Hz, - 30dBv (31mV) à l'entrée de ligne LINE INPUT

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM.
2. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique - 27dBv (44,6mV).
3. Enregistrer les signaux à 333Hz et à 6,3kHz sur STD-608A. Lire la bande et régler VR103 (canal de gauche) et VR203 (canal de droite) de manière à ce que la différence entre les deux soit de 0,5 dB $^{+1}_{-0,5}$ dB.

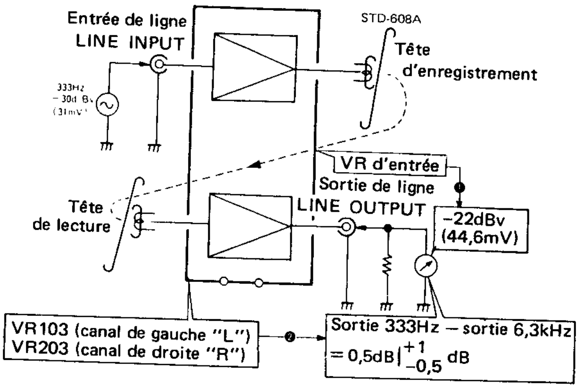

Entrée de ligne
LINE INPUT
333Hz
-30dBv
(31mV)
STD-608A
Tête d'enregistrement
VR d'entrée
Sortie de ligne
LINE OUTPUT
-22dBv
(44,6mV)
Tête de lecture
VR103 (canal de gauche "L")
VR203 (canal de droite "R")
Sortie 333Hz – sortie 6,3kHz
= 0,5dB $^{+1}_{-0,5}$ dB

Fig. 12-8 Réglage de la réponse en fréquence globale

12.7 RÉGLAGE DU NIVEAU D'ENREGISTREMENT

Ce réglage déterminant le niveau de DOLBY NR pendant l'enregistrement, il doit être réalisé avec précision.

Préparation

Mode	Enregistrement
Bande d'essai	STD-608A, STD-603, STD-604
Millivoltmètre CA	TP1 (canal de gauche "L") et TP2 (canal de droite "R") de l'ensemble principal
Signal d'entrée	333Hz, - 10dBv (316mV) à l'entrée de ligne LINE INPUT

Procédure

1. Placer le sélecteur de bande TAPE SELECTOR sur la position NORM.
2. Régler la commande de niveau d'entrée INPUT de manière à ce que le millivoltmètre CA indique - 5,2dBv (0,54V).
3. Placer ensuite le commutateur DOLBY NR sur la position ON (enclenché).
4. Enregistrer le signal de 333Hz sur la bande STD-608A. Lire la bande et régler VR102 (canal de gauche) et VR202 (canal de droite) de manière à ce que le millivoltmètre CA indique - 5,2dBv (0,54V).
5. Placer le sélecteur de bande TAPE SELECTOR sur la position CrO2 et enregistrer le signal de 333Hz sur la bande STD-603. Lire la bande et vérifier que le millivoltmètre CA indique - 5,2dBv (0,54V) ±1,5dB.
6. Placer ensuite le sélecteur de bande TAPE SELECTOR sur la position METAL et enregistrer le signal de 333Hz sur la bande STD-604. Lire la bande et vérifier que le millivoltmètre CA indique - 5,2dBv (0,54V) ±1,5dB.

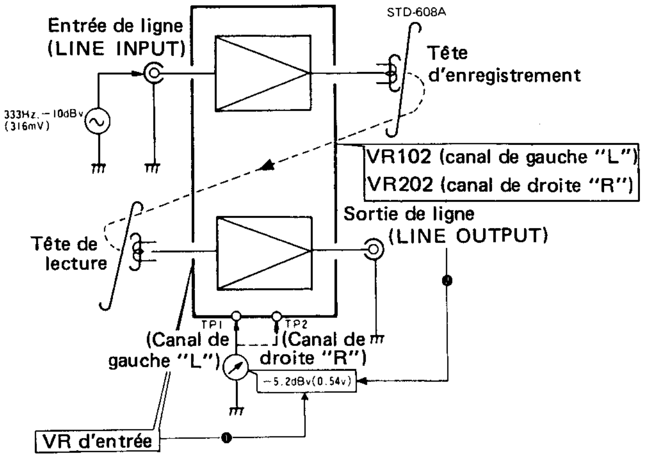
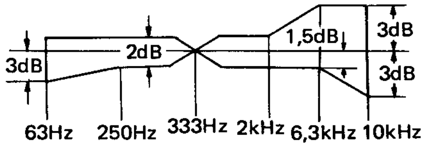

Entrée de ligne
(LINE INPUT)
STD-608A
Tête d'enregistrement
333Hz, −10dBv (316mV)
VR102 (canal de gauche "L")
VR202 (canal de droite "R")
Sortie de ligne
(LINE OUTPUT)
Tête de lecture
TP1
TP2
(Canal de gauche "L")
(Canal de droite "R")
−5.2dBv(0.54v)
VR d'entrée

Fig. 12-9 Réglage du niveau d'enregistrement

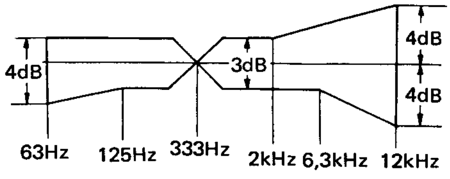
Réponse en fréquence

Utilisation de STD-341A avec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR hors service (OFF) Le canal de droite est compensé de −1dB à 63Hz et de −0,5dB à 125Hz, à cause de l'effet d'isolement

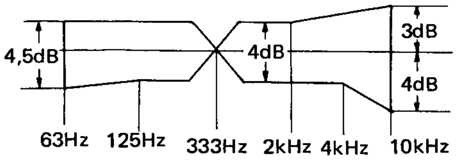


Réponse en frérquence globale

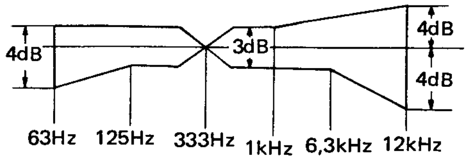
Utilisation de STD-608Aavec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR hors service (OFF)



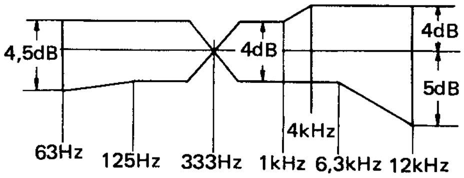
Utilisation de STD-608Aavec TAPE SELECTOR sur la position NORM et le circuit DOLBY NR en service (ON)



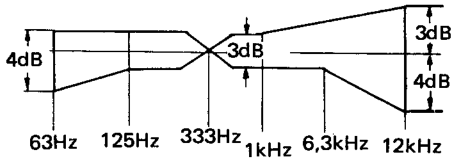
Utilisation de STD-603 avec TAPE SELECTOR sur la position CrO2 et le circuit DOLBY NR hors service (OFF)



Utilisation de STD-603 avec TAPE SELECTOR sur la position CrO2 et le circuit DOLBY NR en service (ON)



Utilisation de STD-604 avec TAPE SELECTOR sur la position METAL et le circuit DOLBY NR hors service (OFF)



Utilisation de STD-604 avec TAPE SELECTOR sur la position METAL et le circuit DOLBY NR en service (ON)

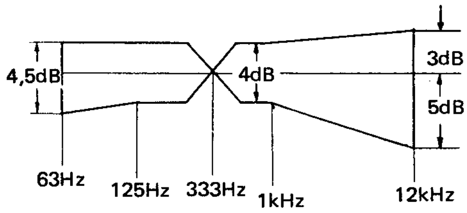


Fig. 12-10 Réponse en fréquence

12. AJUSTES ELÉCTRICOS

Precauciones

1. Deberán completarse los ajustes mecánicos.
2. Limpiar las partes siguientes con algodón humedecido en alcohol: cabeza de grabación/reprodución, rodillo de arrastre, cabeza de borrado, correas de goma y eje de arrastre.
3. Desmagnetizar la cabeza de grabación/reproducción con un desmagnetizador de cabezas.
4. No utilizar destornilladores magnetizados para los ajustes.
5. Los ajustes y las mediciones deberán realizarse para la tensión nominal de suministro de los canales izquierdo y derecho.
6. Los ajustes deberán realizarse en el orden dado en este manual de servicio. Si se altera el orden los ajustes pueden resultar inútiles, dando como resultado una pérdida de rendimiento.
7. El nivel durante las mediciones se basa en 0dBv = 1V. Conectar un resistor fícticio de 50Kohmios (47 ~ 52Kohmios) a los terminales de salida (OUTPUT).
8. Dejar que el CT-320 se precaliente durante algunos minutos antes de proceder con el ajuste.
9. Poner el interruptor de reducción de ruido Dolby (DOLBY NR) en la posición OFF y el selector de cintas (TAPE SELECTOR) en la posición NORM a menos de que se diga otra cosa.

Equipos/herramientas de pruebas requeridos:

1. Cinta de prueba
   - STD-341A .... para el ajuste de reproducción
   - STD-608A .... cinta NORMAL en blanco
   - STD-603 .... cinta CrO2 en blanco
   - STD-604 .... cinta de METAL en blanco
2. Oscilador sonoro
3. Milivoltímetro de CA (AC mV)
4. Atenuador
5. Osciloscopio
6. Resistor de 50Kohmios (47 ~ 52Kohmios)

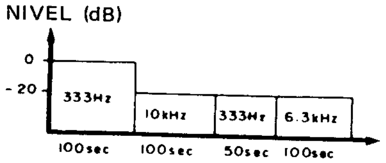


Fig. 12-1 Contenido de la cinta de prueba STD-341A

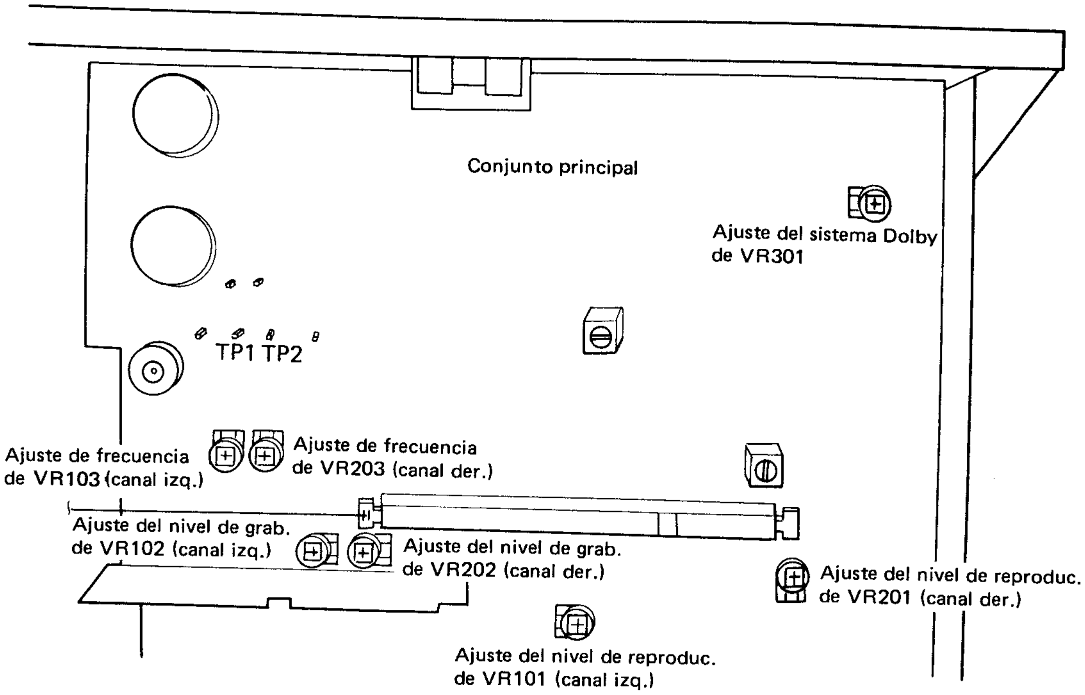

Conjunto principal
Ajuste del sistema Dolby de VR301
TP1 TP2
Ajuste de frecuencia de VR103 (canal izq.)
Ajuste de frecuencia de VR203 (canal der.)
Ajuste del nivel de grab. de VR102 (canal izq.)
Ajuste del nivel de grab. de VR202 (canal der.)
Ajuste del nivel de reproduc. de VR201 (canal der.)
Ajuste del nivel de reproduc. de VR101 (canal izq.)

Fig. 12-2 Puntos de ajuste

12.1 AJUSTE DEL SISTEMA DOLBY

Ajuste

Mode	grabación
Milivoltímetro de CA	TP1 (canal izq.) y TP2 (canal der.) del conjunto principal.
Señal de entrada	2kHz, - 10dBv (316mV) a LINE INPUT

Procedimiento

1. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique - 2,2dBv (776mV).
2. Luego, cambiar el nivel de la señal de entrada a - 30dBv (31,6mV) y el interruptor DOLBY NR a la posición ON.
3. Ajustar la VR301 de modo que el milivoltímetro de CA indique - 17,9dBv (127mV).

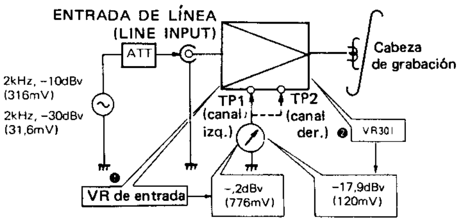

ENTRADA DE LÍNEA
(LINE INPUT)
ATT
2kHz, −10dBv
(316mV)
2kHz, −30dBv
(31,6mV)
Cabeza
de grabación
TP1
(canal
izq.)
TP2
(canal
der.)
VR301
❶
❷
VR de entrada
−,2dBv
(776mV)
−17,9dBv
(120mV)

Fig. 12-3 Ajuste del sistema Dolby

12.2 AJUSTE DEL ACIMUT DE LA CABEZA

Ajuste

Modo	reproducción
Cinta de prueba	STD-341A (10kHz, - 20dB)
Milivoltímetro de CA	LINE OUTPUT
VR101, VR201	incrementar a la posición máxima

Procedimiento

Ajustar el tornillo de ajuste del acimut para que el milivoltímetro de CA ofrezca las lecturas máximas de los canales izquierdo y derecho. Después de este ajuste, enclavar el tornillo con el bloqueador del tornillo.

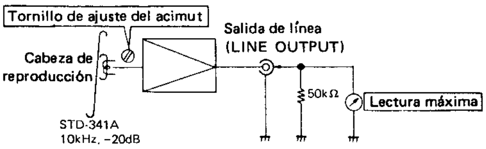

Tornillo de ajuste del acimut
Cabeza de
reproducción
Salida de línea
(LINE OUTPUT)
50kΩ
Lectura máxima
STD-341A
10kHz, −20dB

Fig. 12-4 Ajuste del acimut de la cabeza

12.3 AJUSTE DEL ECUALIZADOR DE REPRODUCCIÓN

Ajuste

Modo	reproducción
Cinta de prueba	STD-341A (333Hz y 6,3kHz, - 20dB)
Milivoltímetro de CA	LINE OUTPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM. Reproducir las partes de 333Hz y 6,3kHz de la STD-341A, y comprobar la diferencia entre los dos niveles de salida no exceda de 0dB ± 1dB.
2. Luego, poner el selector de cintas (TAPE SELECTOR) en la posición HIGH. Reproducir de nuevo las partes de 333Hz y 6,3kHz, y comprobar que la diferencia entre los dos niveles de salida no exceda de - 4dB ±1dB.

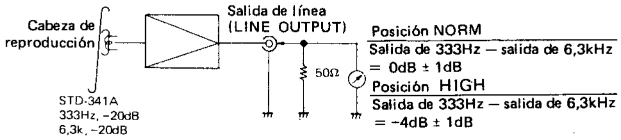

Cabeza de
reproducción
Salida de línea
(LINE OUTPUT)
50Ω
STD-341A
333Hz, −20dB
6,3k, −20dB
Posición NORM
Salida de 333Hz — salida de 6,3kHz
= 0dB ± 1dB
Posición HIGH
Salida de 333Hz — salida de 6,3kHz
= −4dB ± 1dB

Fig. 12-5 Comprobación del ecualizador de reproducción

12.4 AJUSTE DEL NIVEL DE REPRODUCCIÓN

Puesto que este ajuste determina el nivel del sistema Dolby durante la reproducción, deberá realizarse con precisión.

Ajuste

Modo	reproducción
Cinta de prueba	STD-341A (333Hz, 0dB)
Milivoltímetro de CA	TP1 (canal izq.) y TP2 (canal der.) del conjunto principal

Procedimiento

Ajustar la VR101 (canal izquierdo) y la VR201 (canal derecho) de modo que el milivoltímetro de CA indique - 1,2dBv (0,87V).

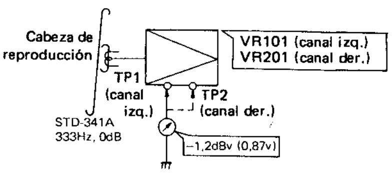

Cabeza de
reproducción
VR101 (canal izq.)
VR201 (canal der.)
TP1
(canal
izq.)
TP2
(canal der.)
STD-341A
333Hz, 0dB
−1,2dBv (0,87v)

Fig. 12-6 Ajuste del nivel de reproducción

12.5 COMPROBACIÓN DEL MEDIDOR DE NIVEL

Ajuste

Modo	grabación
Señal de entrada	333Hz, - 10dBv (316mV) a LINE INPUT
Milivoltímetro de CA ...	TP1 (canal izq.) y TP2 (canal der.) del conjunto principal

Procedimiento

Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique - 5,2dBv (0,54V). Luego, verificar que el medidor de nivel indique 0dB.

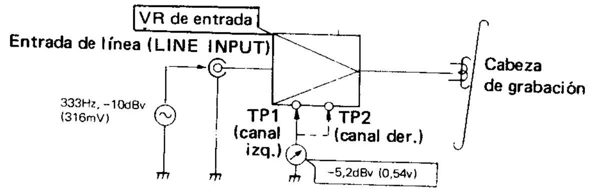

VR de entrada
Entrada de línea (LINE INPUT)
333Hz, -10dBv (316mV)
TP1 (canal izq.)
TP2 (canal der.)
-5,2dBv (0,54v)
Cabeza de grabación

Fig. 12-7 Comprobación del medidor de nivel

12.6 AJUSTE GENERAL DE LA RESPUESTA EN FRECUENCIA

Ajuste

Modo	grabación
Cinta de prueba	STD-608A
Milivoltímetro de CA ...	LINE OUTPUT
Señal de entrada	333Hz, - 30dBv (31mV) a LINE INPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM.
2. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique - 27dBv (44,6mV).
3. Grabar las señales de 333Hz y 6,3kHz de la STD-608A. Reproducir la cinta y ajustar la VR103 (canal izquierdo) y VR203 (canal derecho) de modo que la diferencia entre las dos sea de 0,5dB$^{+1}_{-0,5}$dB.

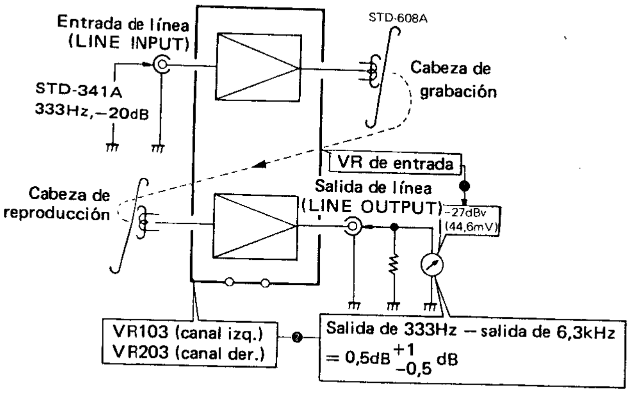

Entrada de línea (LINE INPUT)
STD-341A 333Hz,–20dB
STD-608A
Cabeza de grabación
Cabeza de reproducción
VR de entrada
Salida de línea (LINE OUTPUT)
-27dBv (44,6mV)
VR103 (canal izq.)
VR203 (canal der.)
Salida de 333Hz – salida de 6,3kHz = 0,5dB +1 -0,5 dB

Fig. 12-8 Ajuste general de la respuesta en frecuencia

12.7 AJUSTE DEL NIVEL DE GRABACIÓN

Puesto que este ajuste determina el nivel del sistema Dolby durante la grabación, deberá realizarse con precisión.

Ajuste

Modo	grabación
Cinta de prueba	STD-608A, STD-603, STD-604
Milivoltímetro de CA ...	TP1 (canal izq.) y TP2 (canal der.) del conjunto principal
Señal de entrada	333Hz, - 10dBv (316mV) a LINE INPUT

Procedimiento

1. Poner el selector de cintas (TAPE SELECTOR) en la posición NORM.
2. Ajustar el control del nivel de entrada (INPUT) de modo que el milivoltímetro de CA indique - 5,2dBv (0,54V).
3. Luego, poner el interruptor del sistema Dolby (DOLBY NR) en la posición ON.
4. Grabar la señal de 333Hz en la STD-608A. Reproducir la cinta y ajustar la VR102 (canal izquierdo) y la VR202 (canal derecho) de modo que el milivoltímetro de CA indique - 5,2dBv (0,54V).
5. Poner el selector de cinta (TAPE SELECTOR) en la posición CrO_2 y grabar la señal de 333Hz en la STD-603. Reproducir la cinta y verificar que el milivoltímetro de CA indique - 5,2dBv (0,54V) ±1,5dB.
6. Luego, poner el selector de cintas (TAPE SELECTOR) en la posición METAL y grabar la señal de 333Hz en la STD-604. Reproducir la cinta y verificar que el milivoltímetro de CA indique - 5,2dBv (0,54V) ±1,5dB.

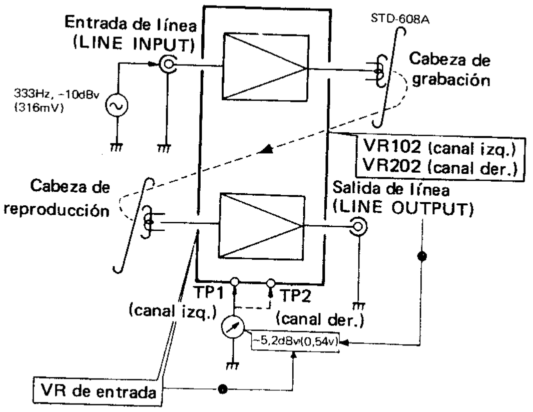
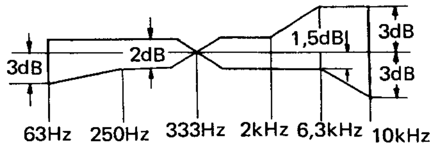

Entrada de línea (LINE INPUT)
333Hz, -10dBv (316mV)
STD-608A
Cabeza de grabación
VR102 (canal izq.)
VR202 (canal der.)
Cabeza de reproducción
Salida de línea (LINE OUTPUT)
TP1 (canal izq.)
TP2 (canal der.)
-5,2dBv(0,54v)
VR de entrada

Fig. 12-9 Ajuste del nivel de grabación

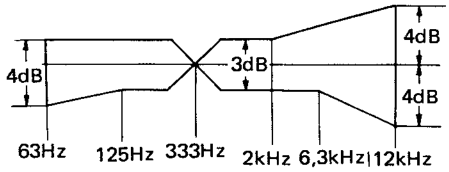
Respuesta en frecuencia

Empleando la STD-341A y el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición OFF
Sin embargo, se compensa el canal derecho en -1dB a 63Hz, y -0,5dB a 125Hz debido al efecto aislante

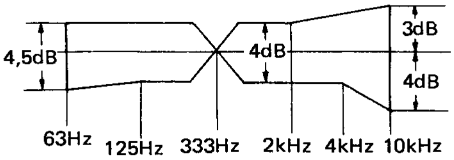

3dB
2dB
1,5dB
3dB
3dB
63Hz
250Hz
333Hz
2kHz
6,3kHz
10kHz

Respuesta en frecuencia general

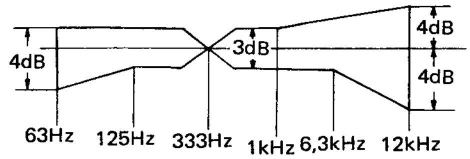
Empleando la STD-608A el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición OFF


4dB
3dB
4dB
4dB
63Hz
125Hz
333Hz
2kHz
6,3kHz
12kHz

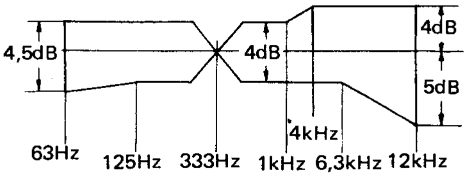
Empleando la STD-608A el selector de cintas (TAPE SELECTOR) en la posición NORM con el sistema Dolby (DOLBY NR) en la posición ON


4,5dB
4dB
3dB
4dB
63Hz
125Hz
333Hz
2kHz
4kHz
10kHz

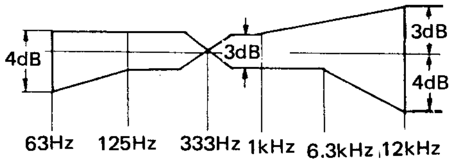
Empleando la STD-603 y el selector de cintas (TAPE SELECTOR) en la posición CrO_2 con el sistema Dolby (DOLBY NR) en la posición OFF


4dB
3dB
4dB
4dB
63Hz
125Hz
333Hz
1kHz
6,3kHz
12kHz

Empleando la STD-603 y el selector de cintas (TAPE SELECTOR) en la posición CrO_2 con el sistema Dolby (DOLBY NR) en la posición ON


4,5dB
4dB
4dB
5dB
4kHz
63Hz
125Hz
333Hz
1kHz
6,3kHz
12kHz

Empleando la STD-604 y el selector de cintas (TAPE SELECTOR) en la posición METAL con el sistema Dolby (DOLBY NR) en la posición OFF


4dB
3dB
3dB
4dB
63Hz
125Hz
333Hz
1kHz
6.3kHz
12kHz

Empleando la STD-604 y el selector de cintas (TAPE SELECTOR) en la posición METAL y el sistema Dolby (DOLBY NR) en la posición ON

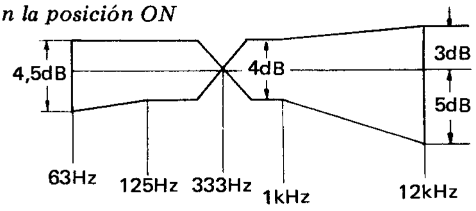
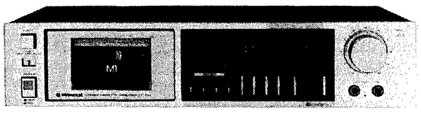

4,5dB
4dB
3dB
5dB
63Hz
125Hz
333Hz
1kHz
12kHz

Fig. 12-10 Respuesta en frecuencia

PIONEER

Service Manual

CIRCUIT & MECHANISM DESCRIPTIONS


The photo shows the model CT-720.

ORDER NO.
ARP-003-0

STEREO CASSETTE TAPE DECK

CT-720
CT-520
CT-320

- This Service Manual should be used together with the Service Manual <ARP-001-0> for CT-6R and 7R, and <ARP-002-0> for CT-4 and 5.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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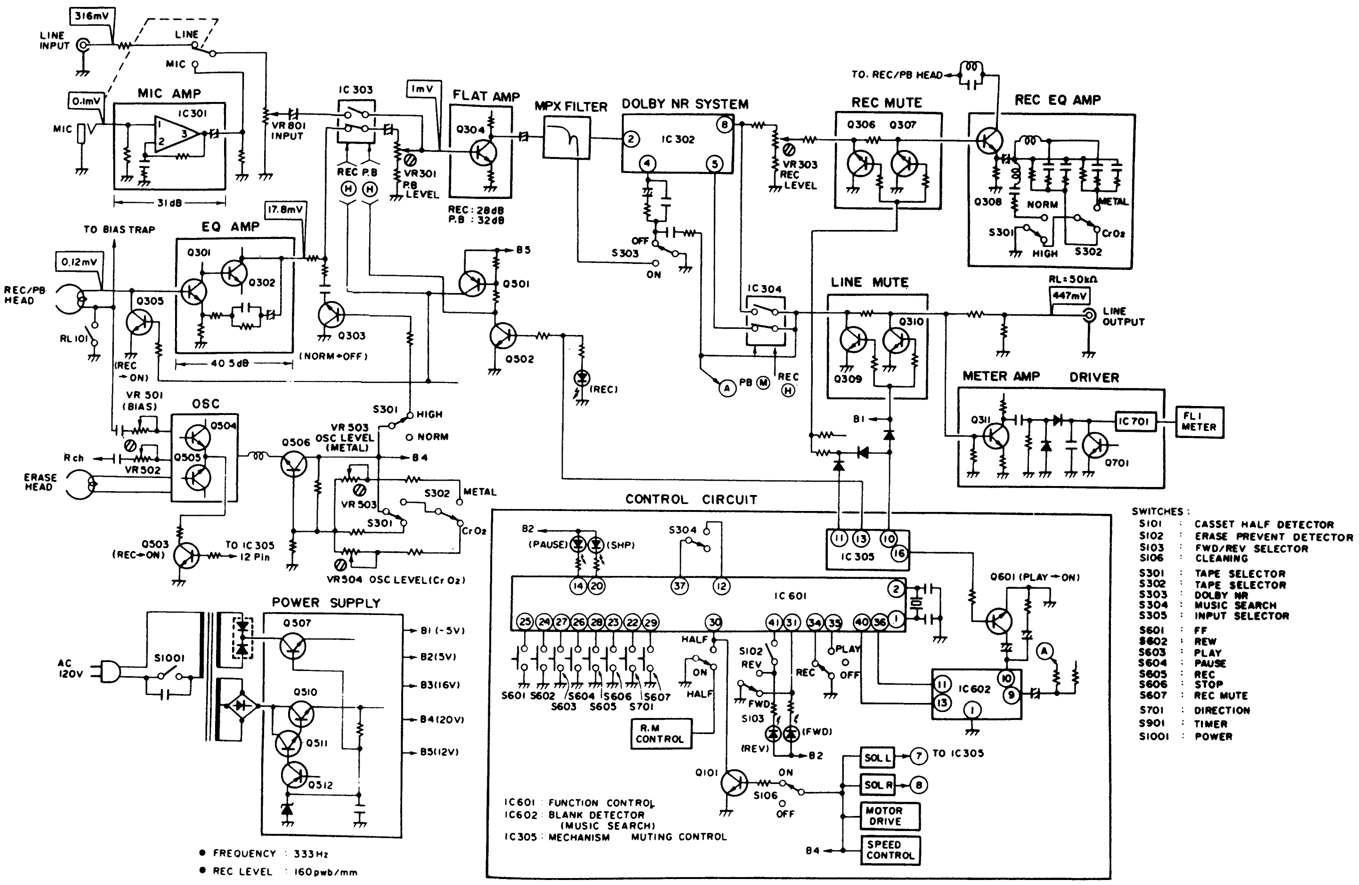
1. CT-720

Block Diagram


316mV
LINE INPUT
LINE
MIC
0.1mV
MIC AMP
IC301
MIC
31dB
VR801 INPUT
IC303
1mV
FLAT AMP
Q304
REC P.B
VR301 PB LEVEL
REC : 28dB
P.B : 32dB
MPX FILTER
DOLBY NR SYSTEM
IC302
S303
OFF
ON
TO. REC/PB HEAD
REC MUTE
Q306 Q307
VR303 REC LEVEL
REC EQ AMP
Q308
NORM
METAL
CrO2
HIGH
S301
S302
17.8mV
TO BIAS TRAP
EQ AMP
0.12mV
Q301
Q302
REC/PB HEAD
Q305
RL101
(REC→ON)
40.5dB
Q303
(NORM→OFF)
B5
Q501
Q502
(REC)
IC304
PB
REC
LINE MUTE
Q310
Q309
RL: 50kΩ
447mV
LINE OUTPUT
METER AMP
DRIVER
Q311
IC701
FLI METER
Q701
VR 501 (BIAS)
OSC
Q504
Q505
Rch
VR502
ERASE HEAD
Q506
VR 503 OSC LEVEL (METAL)
S301
HIGH
NORM
B4
S302
METAL
VR503
CrO2
Q503 (REC→ON)
TO IC305 12 Pin
VR504 OSC LEVEL (CrO2)
CONTROL CIRCUIT
B1
B2
(PAUSE)
(SHP)
S304
IC305
IC601
Q601 (PLAY→ON)
IC602
HALF
ON
S102
REV
PLAY
REC
OFF
S601 S602 S603 S604 S605 S606 S607 S701
R.M CONTROL
FWD
S103
(FWD)
(REV)
Q101
ON
S106
OFF
SOL L
SOL R
TO IC305
MOTOR DRIVE
SPEED CONTROL
B4
IC601 : FUNCTION CONTROL
IC602 : BLANK DETECTOR (MUSIC SEARCH)
IC305 : MECHANISM MUTING CONTROL
POWER SUPPLY
AC 120V
S1001
Q507
Q510
Q511
Q512
B1 (-5V)
B2(5V)
B3(16V)
B4(20V)
B5(12V)
● FREQUENCY : 333Hz
● REC LEVEL : 160pwb/mm
SWITCHES :
S101 : CASSET HALF DETECTOR
S102 : ERASE PREVENT DETECTOR
S103 : FWD/REV SELECTOR
S106 : CLEANING
S301 : TAPE SELECTOR
S302 : TAPE SELECTOR
S303 : DOLBY NR
S304 : MUSIC SEARCH
S305 : INPUT SELECTOR
S601 : FF
S602 : REW
S603 : PLAY
S604 : PAUSE
S605 : REC
S606 : STOP
S607 : REC MUTE
S701 : DIRECTION
S901 : TIMER
S1001 : POWER

Refer to the block diagram for circuit details.

1.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer amplifier (Q301/Q302), a bilateral switch (IC303), a flat amplifier (Q304) and MPX filter to the Dolby NR processor (pin 2 of HA11226). The Dolby NR processor output (pin 8 of HA11226) is passed to the LINE OUTPUT via another bilateral switch (IC304) and the line muting circuit (Q309/Q310).

Recording Mode

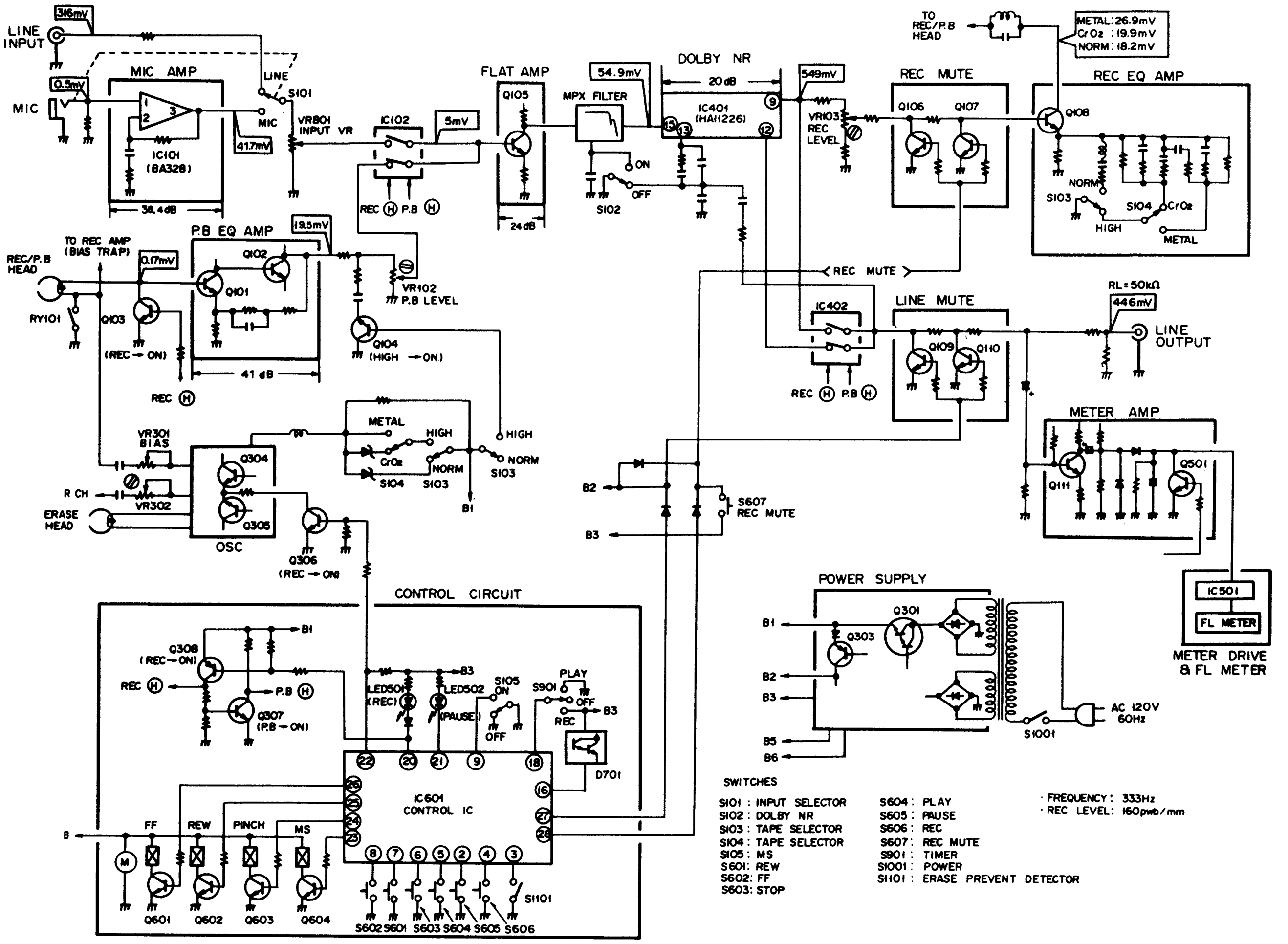
The LINE INPUT signal or MIC signal (mic amplifier output) is passed to the Dolby NR processor (pin 2 of HA11226) via the INPUT level control (VR801), a bilateral switch (IC303), a flat amplifier (Q304) and MPX filter.

The Dolby NR processor output (pin 8 of HA11226) is applied to the REC/PB head via the REC muting circuit (Q306/Q307), the recording amplifier (Q308) and a bias trap.

- For Mechanism Descriptions, refer to the Service Manual (CIRCUIT & MECHANISM DESCRIPTIONS) <ARP-001-0> for CT-6R and 7R.

2. CT-520

Block Diagram


LINE INPUT
316mV
MIC
0.5mV
MIC AMP
IC101 (BA328)
38.4dB
LINE
MIC
S101
41.7mV
VR801 INPUT VR
IC102
5mV
REC Ⓗ P.B Ⓗ
FLAT AMP
Q105
24dB
54.9mV
MPX FILTER
ON
OFF
S102
DOLBY NR
20dB
IC401 (HA11226)
549mV
VR103 REC LEVEL
REC MUTE
Q106
Q107
TO REC/P.B HEAD
METAL: 26.9mV
CrO2 : 19.9mV
NORM : 18.2mV
REC EQ AMP
Q108
NORM
S103
HIGH
S104
CrO2
METAL
TO REC AMP (BIAS TRAP)
REC/P.B HEAD
0.17mV
P.B EQ AMP
19.5mV
Q102
Q101
Q103
RY101
(REC → ON)
41 dB
VR102 P.B LEVEL
Q104 (HIGH → ON)
REC MUTE
IC402
REC Ⓗ P.B Ⓗ
LINE MUTE
Q109
Q110
RL = 50kΩ
446mV
LINE OUTPUT
REC Ⓗ
VR301 BIAS
Q304
R CH
VR302
ERASE HEAD
Q305
OSC
Q306 (REC → ON)
METAL
HIGH
CrO2
NORM
S104
S103
B1
HIGH
NORM
S103
B2
B3
S607 REC MUTE
METER AMP
Q111
Q501
IC501
FL METER
METER DRIVE & FL METER
POWER SUPPLY
Q301
Q303
B1
B2
B3
B5
B6
S1001
AC 120V 60Hz
CONTROL CIRCUIT
B1
Q308 (REC → ON)
REC Ⓗ
P.B Ⓗ
Q307 (P.B → ON)
B3
LED501 (REC)
LED502 (PAUSE)
S105 ON OFF
PLAY
S901
OFF
REC
B3
D701
IC601 CONTROL IC
B
FF
REW
PINCH
MS
M
Q601
Q602
Q603
Q604
S602 S601 S603 S604 S605 S606
S1101

SWITCHES
S101 : INPUT SELECTOR
S102 : DOLBY NR
S103 : TAPE SELECTOR
S104 : TAPE SELECTOR
S105 : MS
S601 : REW
S602 : FF
S603 : STOP
S604 : PLAY
S605 : PAUSE
S606 : REC
S607 : REC MUTE
S901 : TIMER
S1001 : POWER
S1101 : ERASE PREVENT DETECTOR

· FREQUENCY : 333Hz
· REC LEVEL : 160pwb/mm

Refer to the block diagram for circuit details.

2.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer amplifier (Q101/Q102), a bilateral switch (IC102), flat amplifier (Q105) and MPX filter before being applied to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is then passed via another bilateral switch (IC402) and the line muting circuit (Q109/Q110) to the LINE OUTPUT.

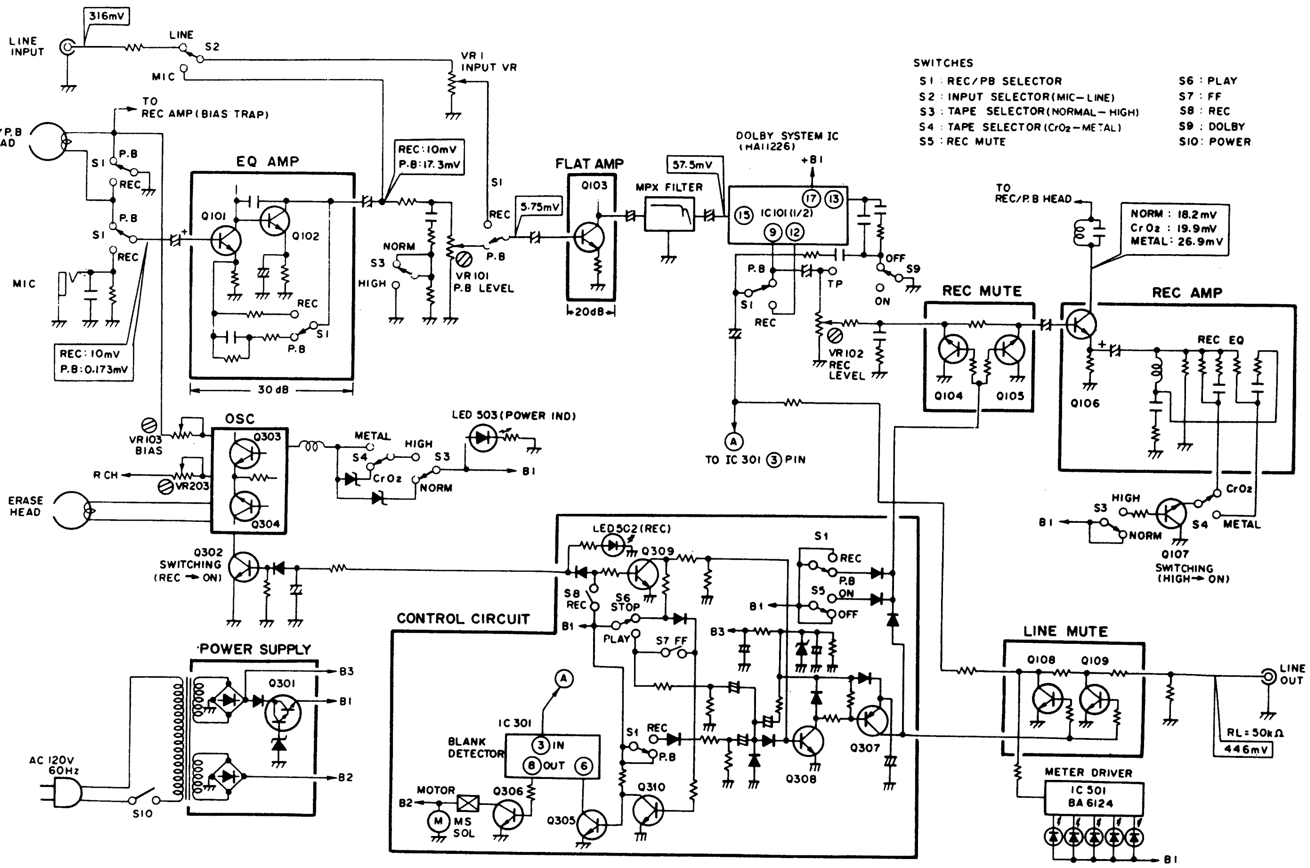
Recording Mode

The LINE INPUT signal or MIC signal (output from the MIC amplifier) is passed via the INPUT level control (VR801), a bilateral switch (IC102), a flat amplifier (Q105) and MPX filter to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is then passed to the REC/PB head via the REC mute circuit (Q106/Q107), recording amplifier (Q108) and bias trap.

- Control circuit and Mechanism Descriptions are basically the same as those in CT-5. Refer to pages 4 through 9 of the Service Manual (CIRCUIT & MECHANISM DESCRPITIONS) <ARP-002-0> for CT-4 and 5.

3. CT-320

Block Diagram


316mV
LINE INPUT
LINE
S2
MIC
VR1 INPUT VR
TO REC AMP (BIAS TRAP)
REC/P.B HEAD
S1
P.B
REC
MIC
REC: 10mV
P.B: 0.173mV
EQ AMP
Q101
Q102
REC
S1
P.B
30 dB
REC: 10mV
P.B: 17.3mV
NORM
S3
HIGH
VR101 P.B LEVEL
S1
REC
5.75mV
P.B
FLAT AMP
Q103
20dB
57.5mV
MPX FILTER
DOLBY SYSTEM IC (HA11226)
+B1
IC101 (1/2)
15
17
13
9
12
P.B
S1
REC
TP
OFF
S9
ON
VR102 REC LEVEL
TO IC 301 3 PIN
A
SWITCHES
S1 : REC/PB SELECTOR
S2 : INPUT SELECTOR (MIC-LINE)
S3 : TAPE SELECTOR (NORMAL-HIGH)
S4 : TAPE SELECTOR (CrO2-METAL)
S5 : REC MUTE
S6 : PLAY
S7 : FF
S8 : REC
S9 : DOLBY
S10 : POWER
TO REC/P.B HEAD
NORM : 18.2mV
CrO2 : 19.9mV
METAL : 26.9mV
REC MUTE
Q104
Q105
REC AMP
REC EQ
Q106
HIGH
S3
B1
NORM
CrO2
S4
METAL
Q107 SWITCHING (HIGH → ON)
OSC
VR103 BIAS
Q303
R CH
VR203
Q304
ERASE HEAD
METAL
HIGH
S4
CrO2
S3
NORM
B1
LED 503 (POWER IND)
Q302 SWITCHING (REC → ON)
LED502 (REC)
Q309
S8 REC
S6 STOP
PLAY
S7 FF
B1
CONTROL CIRCUIT
S1
REC
P.B
S5
ON
OFF
B1
B3
IC 301
BLANK DETECTOR
3 IN
8 OUT
6
MOTOR
B2
M
MS SOL
Q306
Q305
Q310
S1 REC
P.B
Q308
Q307
POWER SUPPLY
B3
Q301
B1
B2
AC 120V 60Hz
S10
LINE MUTE
Q108
Q109
LINE OUT
RL: 50kΩ
446mV
METER DRIVER
IC 501
BA 6124
B1

Refer to the block diagram for circuit details.

3.1 SIGNAL PATHS

Playback Mode

The signal from the REC/PB head is passed via the equalizer/mic amplifier (Q101/Q102) and flat amplifier (Q103) to the Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is applied to the LINE OUTPUT via the line muting circuit (Q108/Q109).

Recording Mode

The LINE INPUT signal is passed via the INPUT SELECTOR switch (S2), the INPUT level control (VR1), a flat amplifier (Q103), the MPX filter and finally to the Dolby NR processor (pin 15 of HA11226).

The MIC output signal, on the other hand, is passed to the equalizer/mic amplifier (Q101/Q102) before being passed to the INPUT SELECTOR switch (S2), the INPUT level control (VR1), flat amplifier (Q103), MPX filter switch and Dolby NR processor (pin 15 of HA11226). The Dolby NR processor output (pin 9 of HA11226) is passed to the REC muting circuit (Q104/Q105), recording amplifier (Q106), bias trap and REC/PB head.

- MUTING circuit, MUSIC SEARCH and Mechanism Descriptions are basically the same as those in CT-4. Refer to pages 11 through 21 of the Service Manual (CIRCUIT & MECHANISM DESCRIPTION) <ARP-002-0> for CT-4 and 5.

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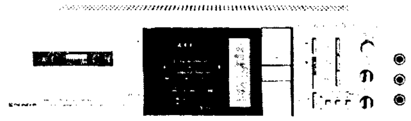
Service Manual

[illegible] [illegible] ERNST LANGE BERLIN
[illegible] [illegible]EXEMPLAR
[illegible] NR. 1052



This photograph is CT-7R.

ORDER NO.
ARP-001-0

STEREO CASSETTE TAPE DECK

CT-7R
CT-6R

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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1. MECHANICAL DESCRIPTIONS

1.1 Mechanism Operation

The various mechanical sections of the recorder are operated using the capstan motor to provide the driving force. The various modes are activated by solenoid L and R, and these are controlled by commands from CPU PD6006.

Both the capstan and reel-motor are direct-drive motors fitted with a Hall sensing element. Reel-motor L and reel-motor R (hereafter called RM L, RM R) are used exclusively for tape take-up in the FF, REW, PLAY, and REC/PLAY modes. The direction of rotation and rotational speed of these motors are controlled by commands from CPU PD6006.

The right side capstan motor is the DD type, and the left side capstan motor is belt-driven by the right side-motor. A sub-rotor acts as the actual capstan. (Refer to Fig. 1-1).

The mechanism forming the right and left-hand side of the unit is essentially symmetrical in configuration, and in forward and reverse (hereafter abbreviated FWD, REV) operations, each side acts together. This description covers the mechanical operations for FWD movement.

■ Basic Operations of the Mechanism

The mechanism assumes three different states: STOP, PAUSE, and PLAY. Consequently, since it can travel in the FWD and REV direction, there are a total of six states possible. There is also a direction operation for switching between FWD and REV travel. Transition between the FWD and REV state will be described using only one example.

When the mechanism, presently in the FWD-PLAY mode, is switched to the REV-PLAY mode, a direction operation is required, then the mechanism will make the transition following the steps listed below. (Refer to Fig. 1-2).

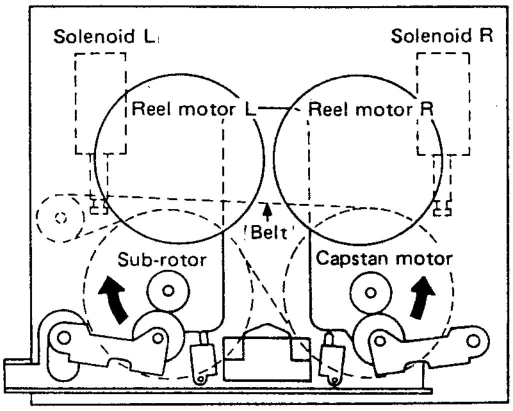


Fig. 1-1 Mechanical construction

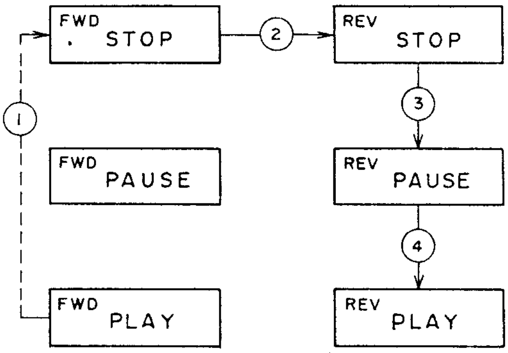


Fig. 1-2 Mechanism mode transition (example)

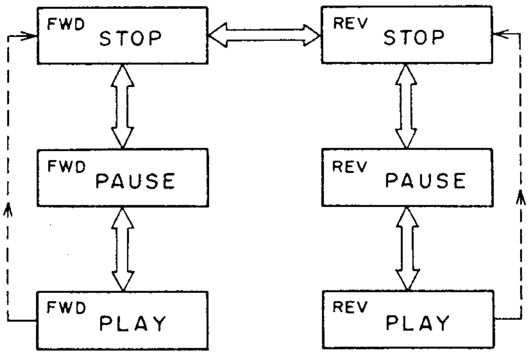
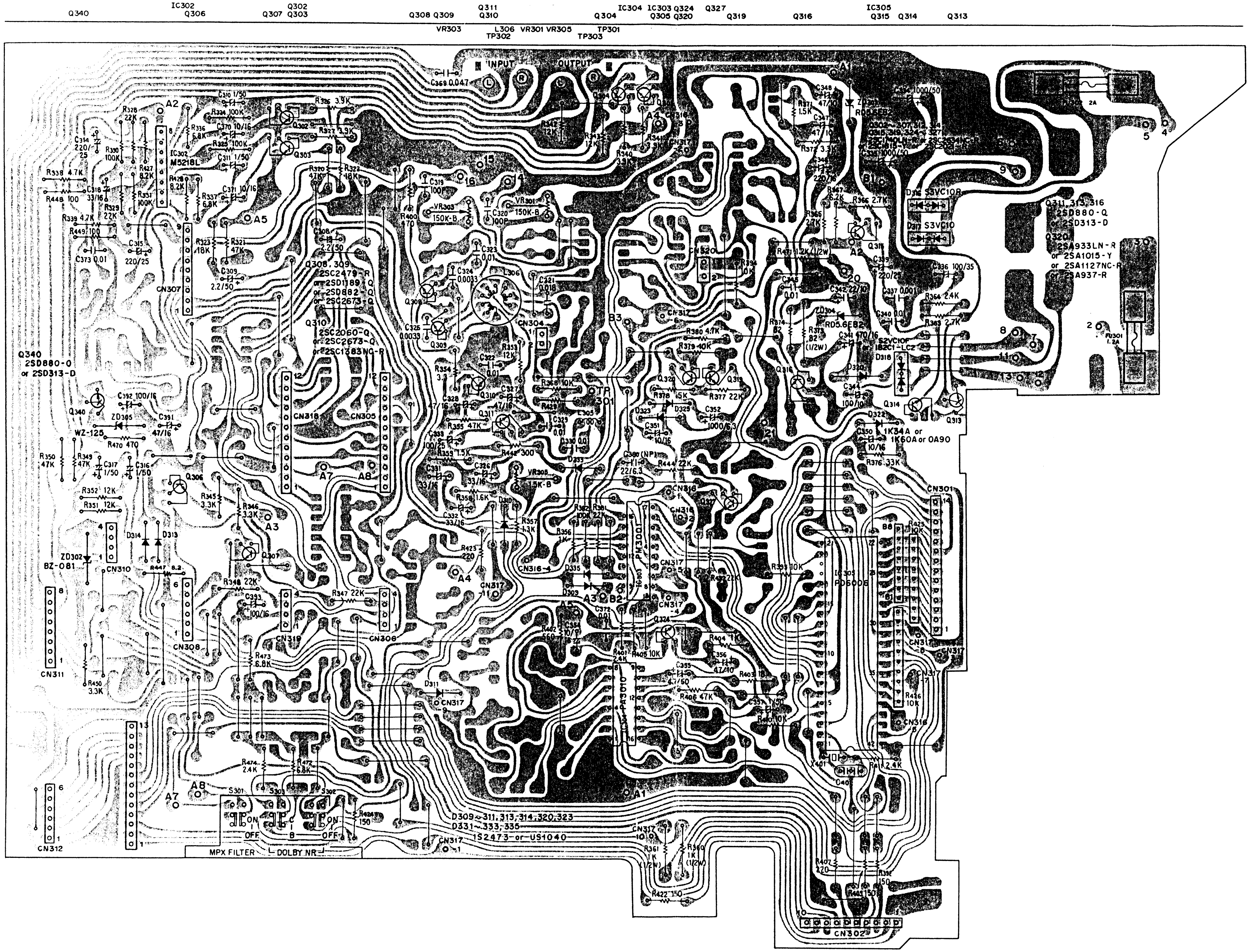
Mechanism Mode Transition Flow	State	Mode
 FWD STOP REV STOP FWD PAUSE REV PAUSE FWD PLAY REV PLAY	STOP state	STOP, DIRECTION (DIR)
	PAUSE state	PAUSE, PLAY / PAUSE, REC-PLAY / PAUSE, FF, REW.
	PLAY state	PLAY, REC / PLAY.

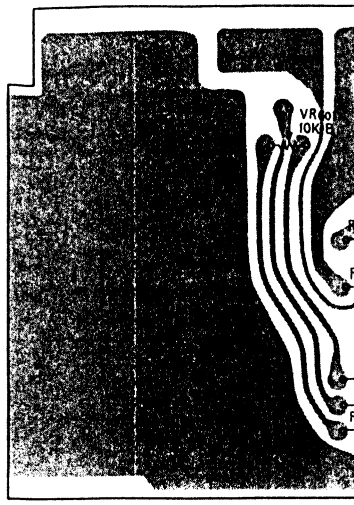
Fig. 1-3 Mechanism mode transition flow and modes

2. P.C. BOARD PATTERNS

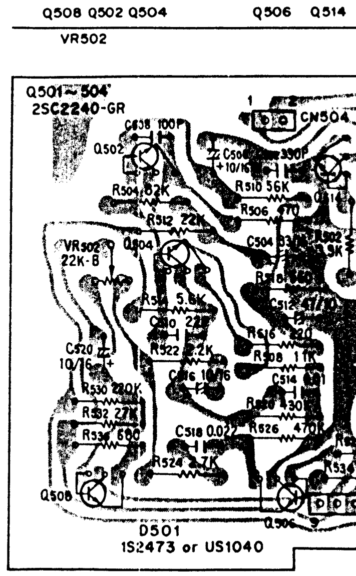
Mother Assembly (RWX-593)


Q340
IC302 Q306
Q307 Q302 Q303
Q308 Q309
Q311 Q310
VR303
L306 TP302
VR301 VR305
Q304
IC304 IC303 Q324 Q305 Q320
Q327
TP301 TP303
Q319
Q316
IC305 Q315
Q314
Q313
INPUT
OUTPUT
IC302 M5218L
Q308, 309 2SC2479-R or 2SD1189-Q or 2SD882-Q or 2SC2673-Q
Q310 2SC2060-Q or 2SC2673-Q or 2SC1383NC-R
Q340 2SD880-O or 2SD313-D
Q311, 313, 316 2SD880-Q or 2SD313-D
Q320 2SA933LN-R or 2SA1015-Y or 2SA1127NC-R or 2SA937-R
D316 S3VC10R
D317 S3VC10
ZD305 WZ-125
ZD302 BZ-081
ZD304 RD5.6EB2
D318 S2VC10F or 1S2C1-LC2
D322 1K34A or 1K60A or OA90
FU301 1.2A
IC303 PD5006
D309~311, 313, 314, 320, 323
D331~333, 335
1S2473 or US1040
S301 S303 S302
ON OFF
MPX FILTER
DOLBY NR
CN301 CN302 CN304 CN305 CN306 CN307 CN308 CN310 CN311 CN312 CN316 CN317 CN319 CN320
A1 A2 A3 A4 A5 A7 A8 B1 B2 B3
A
B
C
D

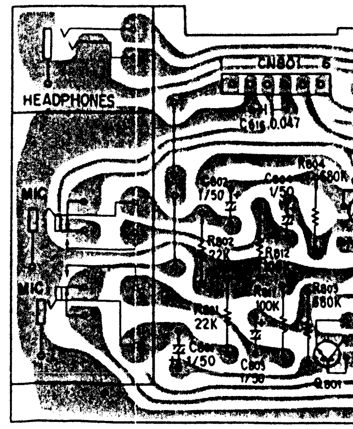
Dolby NR Assembly (RWX-



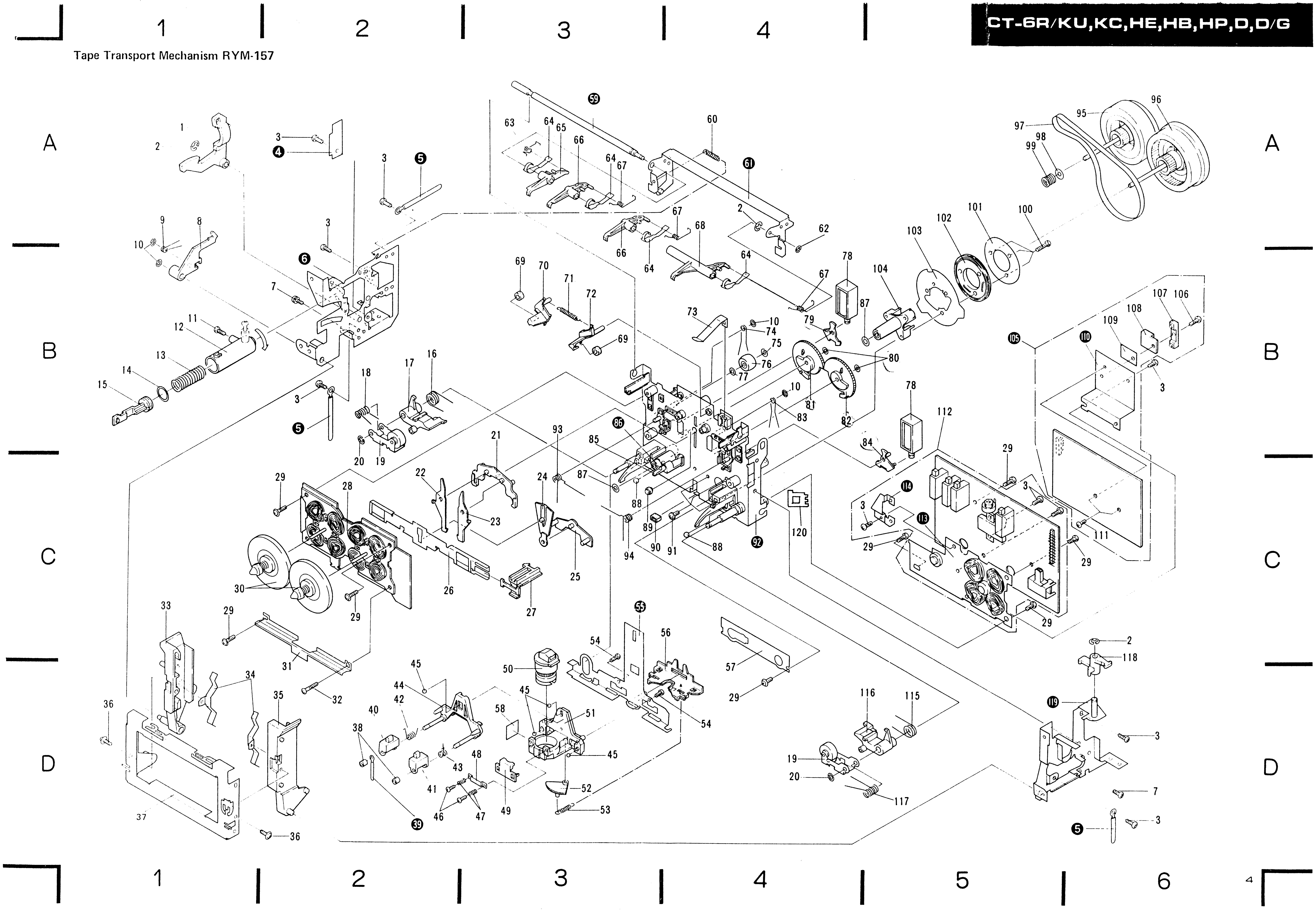
Amplifier Assembly (RWF-1


Q508 Q502 Q504
Q506 Q514
VR502
Q501~504 2SC2240-GR
D501 1S2473 or US1040

Jack Assembly (RWX-575)


HEADPHONES
MIC
CN501

Tape Transport Mechanism RYM-157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A
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❺
63
64
65
66
64
67
❺❾
60
❻❶
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68
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62
66
64
64
78
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103
102
101
100
104
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❶❶⓪
109
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107
106
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93
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84
78
112
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3
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3
❶❶❸
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51
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43
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41
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47
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❺
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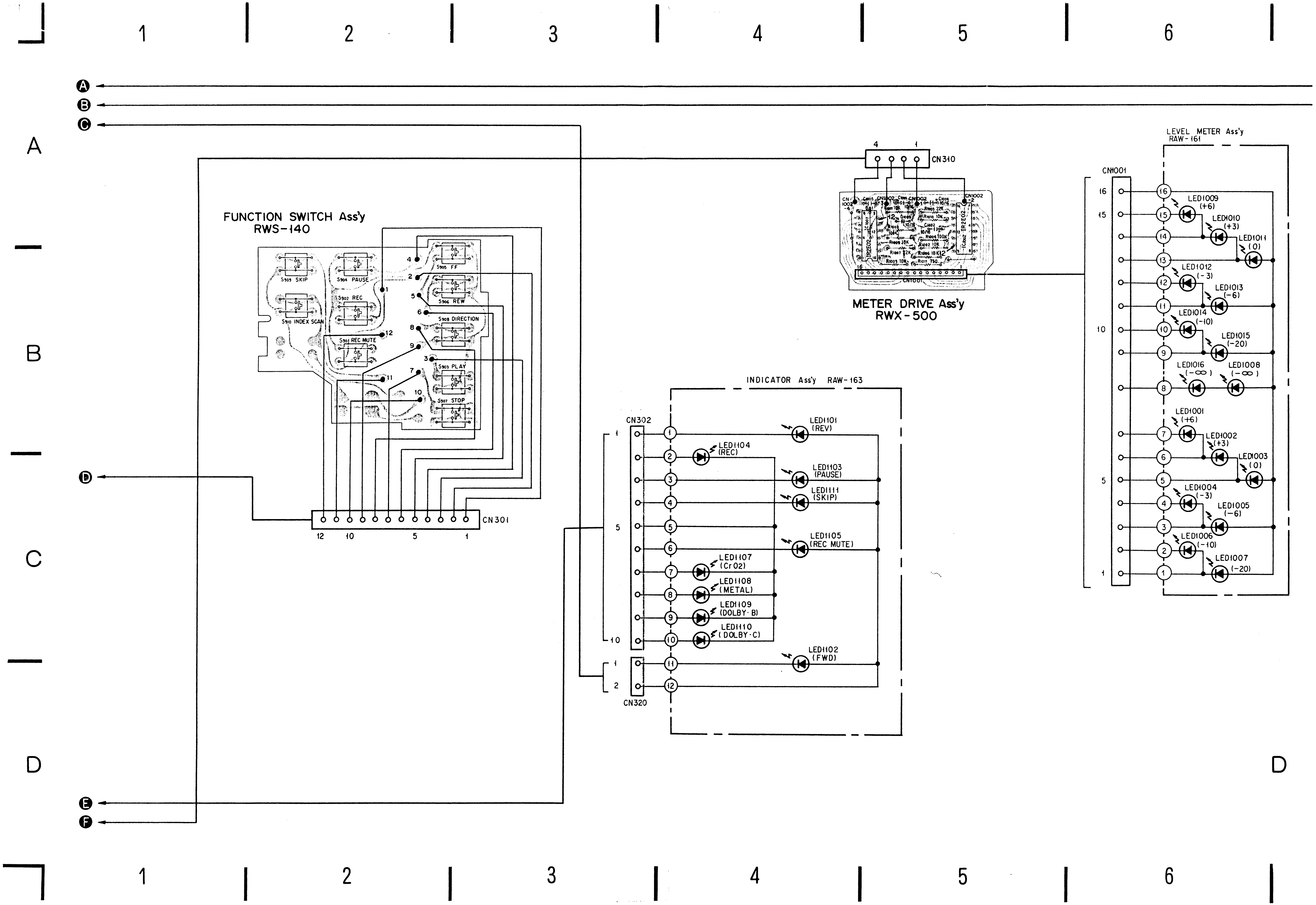
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A
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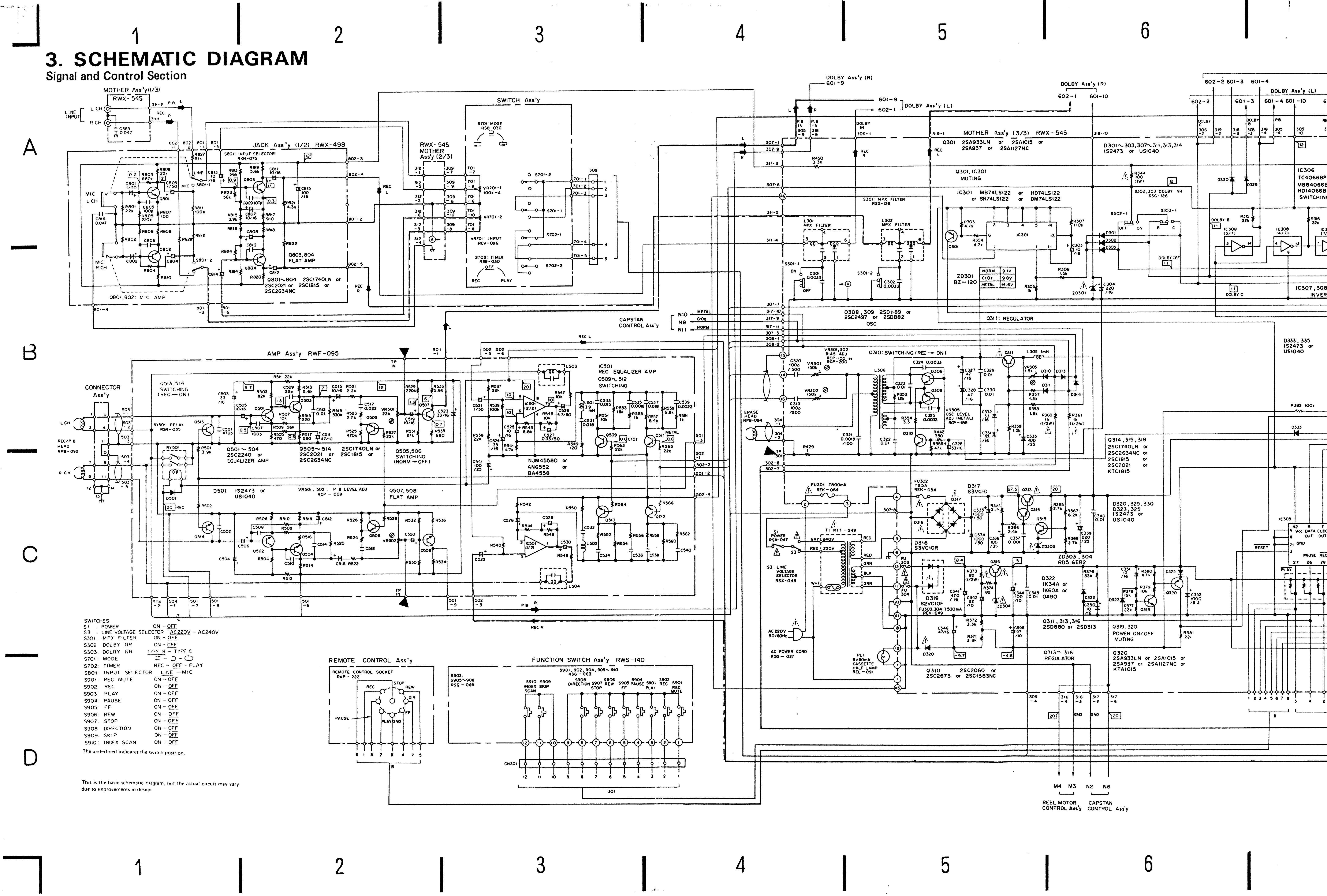
C
D
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ
Ⓕ
FUNCTION SWITCH Ass'y
RWS-140
S903 SKIP
S904 PAUSE
S902 REC
S910 INDEX SCAN
S901 REC MUTE
S905 FF
S906 REW
S908 DIRECTION
S903 PLAY
S907 STOP
CN301
12
10
5
1
CN310
METER DRIVE Ass'y
RWX-500
CN1002 -4
C1005 0.01
CN1002 -3
C1001 10/16
CN1002 -1
C1004 10/16
CN1002 -2
R1001 10K
R1005 22K
R1010 10K
C1003 10/16
C1002 10/16
R1003 100K
R1004 100K
R1008 18K
R1002 10K
R1007 22K
R1006 18K
R1009 10K
R1011 750
IC1001
IR2E02
IC1002
CN1001
16
LEVEL METER Ass'y
RAW-161
CN1001
LED1009 (+6)
LED1010 (+3)
LED1011 (0)
LED1012 (-3)
LED1013 (-6)
LED1014 (-10)
LED1015 (-20)
LED1016 (-∞)
LED1008 (-∞)
LED1001 (+6)
LED1002 (+3)
LED1003 (0)
LED1004 (-3)
LED1005 (-6)
LED1006 (-10)
LED1007 (-20)
INDICATOR Ass'y RAW-163
CN302
CN320
LED1101 (REV)
LED1104 (REC)
LED1103 (PAUSE)
LED1111 (SKIP)
LED1105 (REC MUTE)
LED1107 (CrO2)
LED1108 (METAL)
LED1109 (DOLBY·B)
LED1110 (DOLBY·C)
LED1102 (FWD)

3. SCHEMATIC DIAGRAM

Signal and Control Section



1
2
3
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6
A
B
C
D
MOTHER Ass'y (1/3) RWX-545
LINE INPUT
L CH
R CH
JACK Ass'y (1/2) RWX-498
S801 INPUT SELECTOR RKN-075
MIC L CH
MIC R CH
Q801,802 MIC AMP
Q803,804 FLAT AMP
Q801∼804 2SC1740LN or 2SC2021 or 2SC1815 or 2SC2634NC
RWX-545 MOTHER Ass'y (2/3)
SWITCH Ass'y
S701 MODE RSB-030
VR701: INPUT RCV-096
S702: TIMER RSB-030
REC OFF PLAY
DOLBY Ass'y (R)
DOLBY Ass'y (L)
MOTHER Ass'y (3/3) RWX-545
Q301 2SA933LN or 2SA1015 or 2SA937 or 2SA1127NC
Q301, IC301 MUTING
IC301 MB74LS122 or HD74LS122 or SN74LS122 or DM74LS122
S301 MPX FILTER RSG-126
L301 MPX FILTER
L302 MPX FILTER
S302,303 DOLBY NR RSG-126
D301∼303,307∼311,313,314 1S2473 or US1040
IC306 TC4066BP MB84066B HD14066B SWITCHING
ZD301 BZ-120
NORM 9.1V
CrO2 9.8V
METAL 14.6V
CAPSTAN CONTROL Ass'y
N10 METAL
N9 CrO2
N11 NORM
Q308,309 2SD1189 or 2SC2497 or 2SD882 OSC
Q311: REGULATOR
AMP Ass'y RWF-095
CONNECTOR Ass'y
REC/P B HEAD RPB-092
RY501 RELAY RSR-035
Q513,514 SWITCHING (REC → ON)
Q501∼504 2SC2240 or EQUALIZER AMP
Q505∼514 2SC2021 2SC1740LN or 2SC2634NC 2SC1815 or
Q505,506 SWITCHING (NORM → OFF)
IC501 REC EQUALIZER AMP
Q509∼512 SWITCHING
NJM4558D or AN6552 or BA4558
D501 1S2473 or US1040
VR501, 502 P B LEVEL ADJ RCP-009
Q507,508 FLAT AMP
Q310: SWITCHING (REC → ON)
VR301,302 BIAS ADJ RCP-155 or RCP-200
VR305 OSC LEVEL ADJ (METAL) RCP-188
ERASE HEAD RPB-094
L305 1mH
D333,335 1S2473 or US1040
Q314,315,319 2SC1740LN or 2SC2634NC or 2SC1815 or 2SC2021 or KTC1815
FU301 T800mA REK-064
FU302 T2.5A REK-054
D317 S3VC10
D316 S3VC10R
S1 POWER RSA-047
T1 RTT-249
S3: LINE VOLTAGE SELECTOR RSX-045
D318 S2VC10F
FU303,304 T500mA REK-049
D320,329,330 D323,325 1S2473 or US1040
ZD303,304 RD5.6EB2
D322 1K34A or 1K60A or OA90
Q311,313,316 2SD880 or 2SD313
Q313∼316 REGULATOR
Q319,320 POWER ON/OFF MUTING
Q320 2SA933LN or 2SA1015 or 2SA937 or 2SA1127NC or KTA1015
Q310 2SC2060 or 2SC2673 or 2SC1383NC
AC 220V 50/60Hz
AC POWER CORD RDG-027
PL1 8V50mA CASSETTE HALF LAMP REL-091
REMOTE CONTROL Ass'y
REMOTE CONTROL SOCKET RKP-222
FUNCTION SWITCH Ass'y RWS-140
S901,902,904,909∼910 RSG-063
S903, S905∼908 RSG-088
S910 INDEX SCAN
S909 SKIP
S908 DIRECTION
S907 STOP
S906 REW
S905 FF
S904 PAUSE
S903 PLAY
S902 REC
S901 REC MUTE
CN301
REEL MOTOR CONTROL Ass'y
CAPSTAN CONTROL Ass'y
M4 M3 N2 N6
IC305
IC307,308 INVERTER

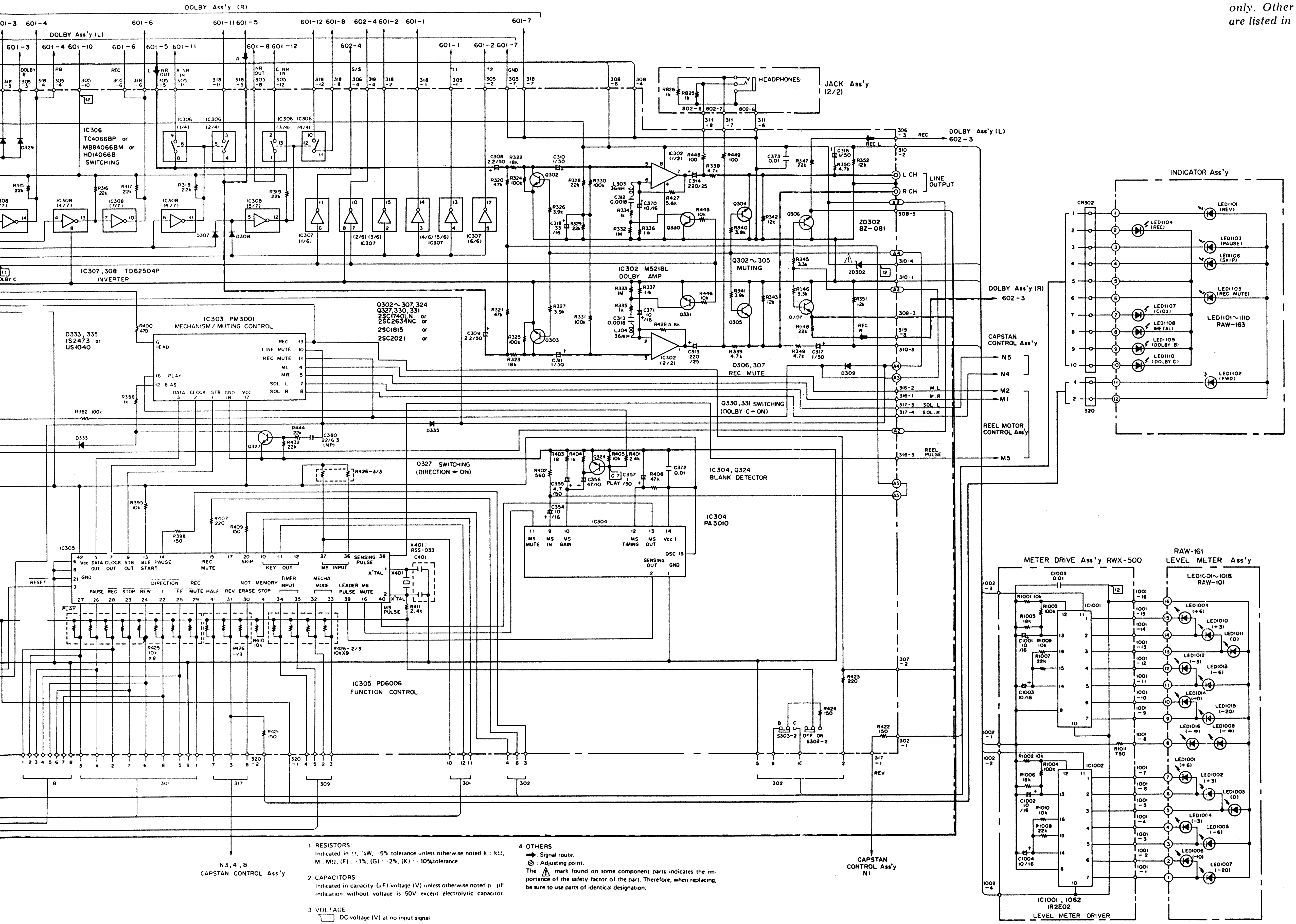
SWITCHES

S1 :	POWER	ON - OFF
S3 .	LINE VOLTAGE SELECTOR	AC220V - AC240V
S301 .	MPX FILTER	ON - OFF
S302	DOLBY NR	ON - OFF
S303 .	DOLBY NR	TYPE B - TYPE C
S701 :	MODE	⇄ - ⊃ - ⊂⊃
S702 :	TIMER	REC - OFF - PLAY
S801 :	INPUT SELECTOR	LINE - MIC
S901 :	REC MUTE	ON - OFF
S902 .	REC	ON - OFF
S903 :	PLAY	ON - OFF
S904 :	PAUSE	ON - OFF
S905 :	FF	ON - OFF
S906 :	REW	ON - OFF
S907 .	STOP	ON - OFF
S908	DIRECTION	ON - OFF
S909 .	SKIP	ON - OFF
S910 :	INDEX SCAN	ON - OFF

The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.


DOLBY Ass'y (R)
DOLBY Ass'y (L)
JACK Ass'y (2/2)
HEADPHONES
LINE OUTPUT
L CH
R CH
DOLBY Ass'y (L) 602-3
DOLBY Ass'y (R) 602-3
IC306 TC4066BP or MB84066BM or HD14066B SWITCHING
IC307,308 TD62504P INVERTER
IC302 M5218L DOLBY AMP
Q302～305 MUTING
ZD302 BZ-081
Q302～307,324 Q327,330,331 2SC1740LN or 2SC2634NC or 2SC1815 or 2SC2021
D333,335 1S2473 or US1040
IC303 PM3001 MECHANISM/MUTING CONTROL
Q306,307 REC MUTE
Q330,331 SWITCHING (DOLBY C→ON)
Q327 SWITCHING (DIRECTION→ON)
IC304,Q324 BLANK DETECTOR
IC304 PA3010
X401 RSS-033
IC305 PD6006 FUNCTION CONTROL
CAPSTAN CONTROL Ass'y
N5
N4
M2
M1
REEL MOTOR CONTROL Ass'y
M5
N3,4,8 CAPSTAN CONTROL Ass'y
CAPSTAN CONTROL Ass'y N1
INDICATOR Ass'y
LED1101 (REV)
LED1104 (REC)
LED1103 (PAUSE)
LED1106 (SKIP)
LED1105 (REC MUTE)
LED1107 (CrO2)
LED1108 (METAL)
LED1109 (DOLBY B)
LED1110 (DOLBY C)
LED1102 (FWD)
LED1101～1110 RAW-163
CN302
METER DRIVE Ass'y RWX-500
RAW-161 LEVEL METER Ass'y
LED1001～1016 RAW-101
IC1001, 1002 IR2E02 LEVEL METER DRIVER

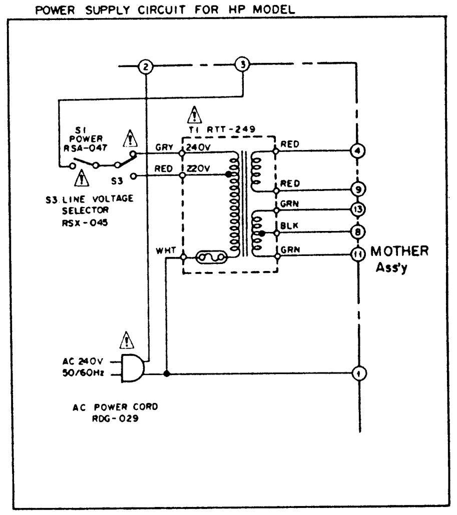
1. RESISTORS:
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

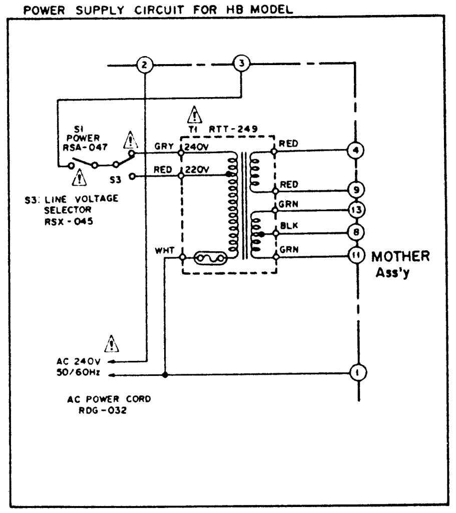
3. VOLTAGE
▭ DC voltage (V) at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

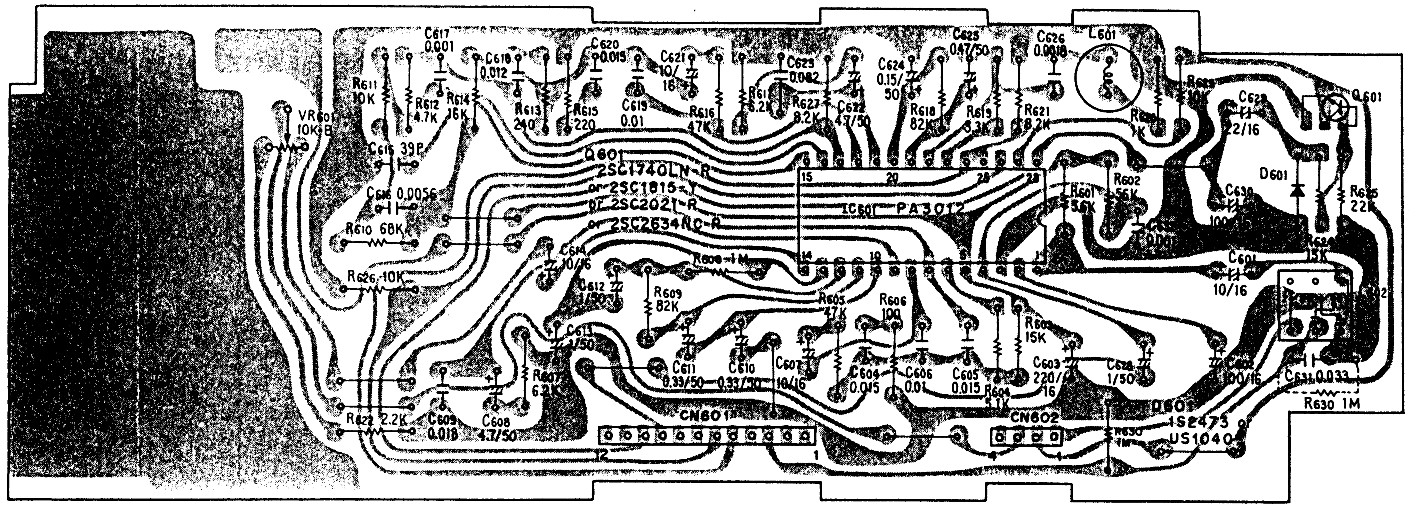
POWER SUPPLY CIRCUIT FOR HP MODEL


S1 POWER RSA-047
S3 LINE VOLTAGE SELECTOR RSX-045
T1 RTT-249
GRY
RED
240V
220V
WHT
RED
GRN
BLK
GRN
MOTHER Ass'y
AC 240V 50/60Hz
AC POWER CORD RDG-029

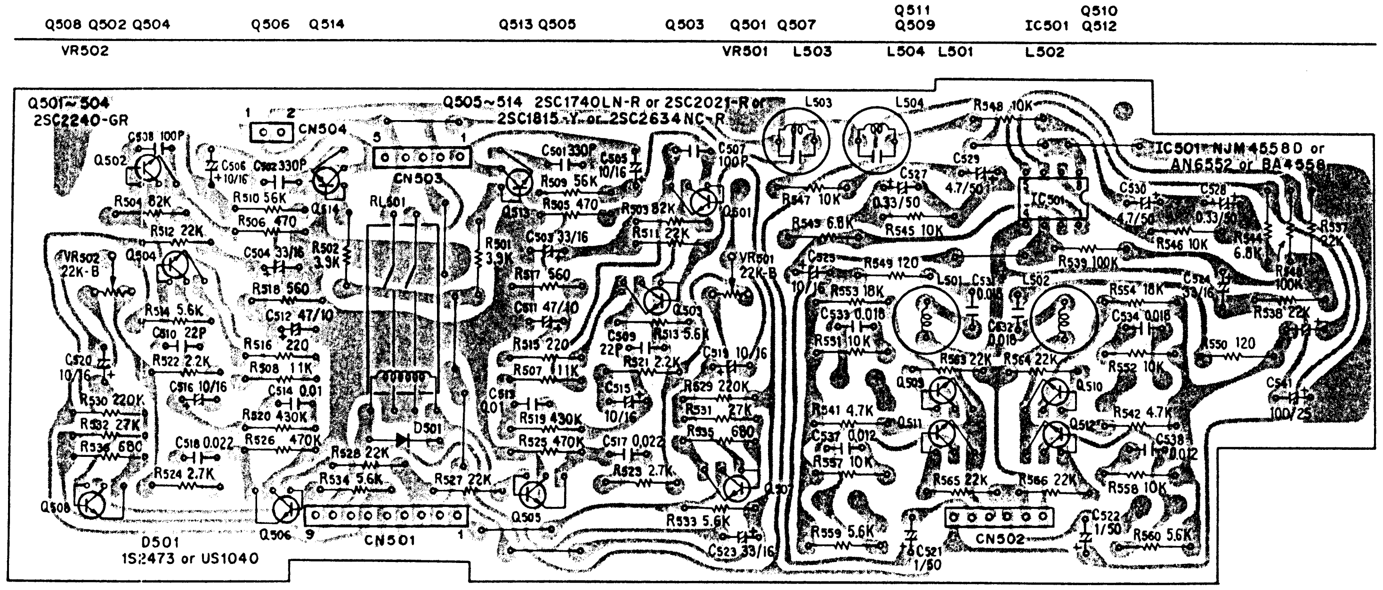
POWER SUPPLY CIRCUIT FOR HB MODEL


S1 POWER RSA-047
S3 LINE VOLTAGE SELECTOR RSX-045
T1 RTT-249
GRY
RED
240V
220V
WHT
RED
GRN
BLK
GRN
MOTHER Ass'y
AC 240V 50/60Hz
AC POWER CORD RDG-032

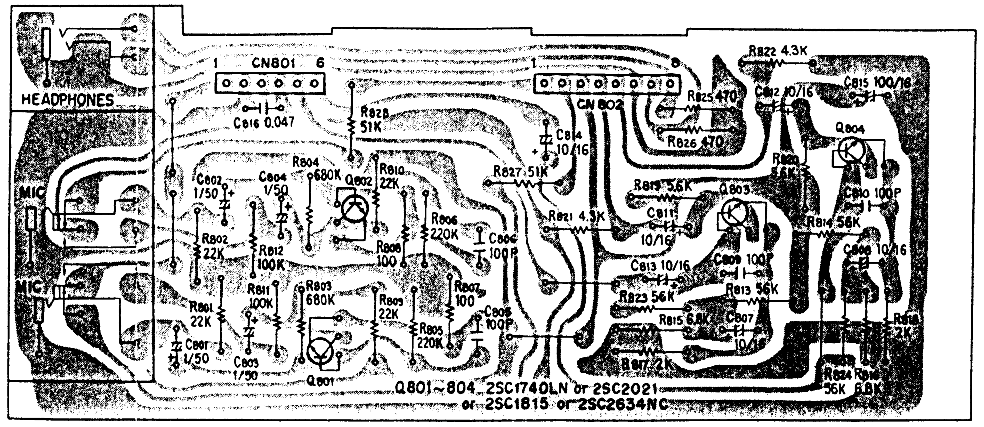
Dolby NR Assembly (RWX-597)


VR601 10K-B
R611 10K
C617 0.001
R612 4.7K
R614 15K
C618 0.012
R613 240
R615 220
C620 0.015
C619 0.01
C621 10/16
R616 47K
C623 0.082
R617 6.2K
R627 8.2K
C622 4.7/50
C624 0.15/50
R618 82K
C625 0.47/50
R619 8.2K
C626 0.0018
R621 8.2K
L601
Q601
C629 22/16
D601
R635 22K
C615 39P
C616 0.0056
R610 68K
R626 10K
Q601 2SC1740LN-R or 2SC1815-Y or 2SC2021-R or 2SC2634NC-R
IC601 PA3012
R601 5.6K
R602 56K
C630
C601 10/16
C614 10/16
C612
R608 1M
R609 82K
R605 47K
R606 100
R603 15K
C613 1/50
C611 0.33/50
C610 0.33/50
C607 10/16
C604 0.015
C606 0.01
C605 0.015
R604 5.1K
C603 220/16
C628 1/50
C602 100/16
C631 0.033
R630 1M
R607 6.2K
R622 2.2K
C609 0.018
C608 4.7/50
CN601
CN602
D603 1S2473 or US1040
12

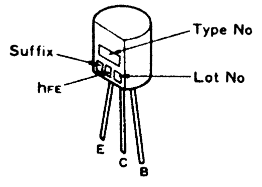
Amplifier Assembly (RWF-105)


Q508 Q502 Q504
VR502
Q506 Q514
Q513 Q505
Q503
Q501 Q507
VR501 L503
Q511 Q509
L504 L501
IC501
L502
Q510 Q512
Q501~504 2SC2240-GR
Q505~514 2SC1740LN-R or 2SC2021-R or 2SC1815-Y or 2SC2634NC-R
CN504
CN503
RL501
C538 100P
C506 10/16
C502 330P
R504 82K
R510 56K
R512 22K
R506 470
Q502
VR502 22K-B
Q504
C504 33/16
R502 3.3K
R518 560
C512 47/10
R514 5.6K
C510 22P
R516 220
R522 2.2K
C516 10/16
R508 11K
C514 0.01
R520 430K
C520 10/16
R530 220K
R532 27K
R536 680
C518 0.022
R526 470K
R524 2.7K
R528 22K
R534 5.6K
R527 22K
D501
Q508
Q506
CN501
D501 1S2473 or US1040
C501 330P
C505 10/16
R509 56K
R505 470
R503 82K
R511 22K
C503 33/16
R501 3.3K
R517 560
C511 47/10
R515 220
R507 11K
C513 0.01
R519 430K
R525 470K
C517 0.022
R523 2.7K
C509 22P
R513 5.6K
R521 2.2K
C515 10/16
C519 10/16
R529 220K
R531 27K
R535 680
R533 5.6K
C523 33/16
Q505
Q503
Q501
Q507
VR501 22K-B
C507 100P
L503
L504
R548 10K
IC501 NJM4558D or AN6552 or BA4558
R547 10K
C527 0.33/50
C529 4.7/50
R549 6.8K
R545 10K
C530 4.7/50
C528 0.33/50
R546 10K
R544 6.8K
R537 22K
R540 100K
R538 22K
C525
R543 18K
R539 100K
R554 18K
C524 33/16
C533 0.018
L501
L502
C532 0.018
C534 0.018
R551 10K
R553 18K
R550 120
R549 120
C541 100/25
R552 10K
R563 22K
R564 22K
R541 4.7K
R542 4.7K
C537 0.012
C536 0.012
R557 10K
R558 10K
Q509
Q511
Q510
Q512
R565 22K
R566 22K
CN502
C522 1/50
C521 1/50
R559 5.6K
R560 5.6K

Jack Assembly (RWX-575)


HEADPHONES
MIC
MIC
CN801
CN802
C816 0.047
R828 51K
C802 1/50
C804 1/50
R804 680K
Q802
R810 22K
R802 22K
R812 100K
R808 100
R806 220K
C806 100P
R811 100K
R803 680K
R809 22K
R807 100
R801 22K
C801 1/50
C803 1/50
R805 220K
C805 100P
Q801
R822 4.3K
C812 10/16
C815 100/16
R825 470
R826 470
C814 10/16
Q804
R827 51K
R819 5.6K
R821 4.3K
C811 10/16
Q803
C810 100P
R814 56K
C809 100P
C808 10/16
C813 10/16
R823 56K
R813 56K
R815 6.8K
C807 10/16
R817 2K
R824 56K
R818 6.8K
R816 2K
Q801~804 2SC1740LN or 2SC2021 or 2SC1815 or 2SC2634NC

2SA933LN
2SC1740LN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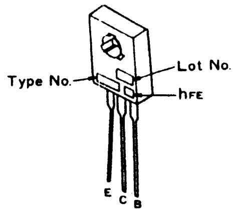
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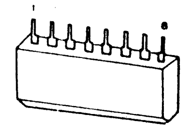

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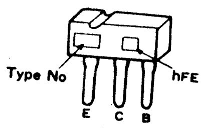
2SC2021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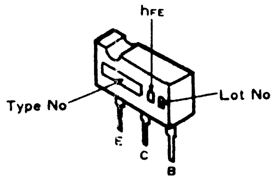
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IR2E02
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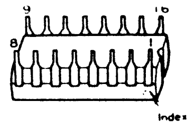
PA2009
PA3010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Index

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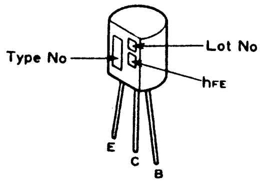
2SC1815
2SC2240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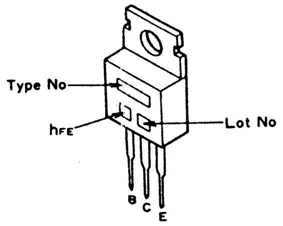
E
C
B

2SD313
2SD880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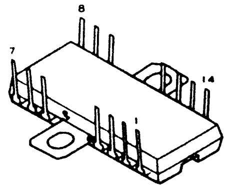
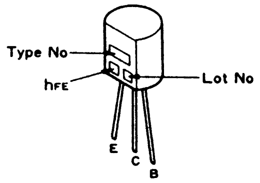
PA2012



2SA1127NC
2SC2634NC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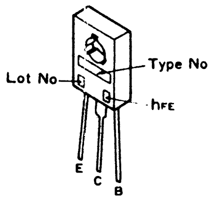
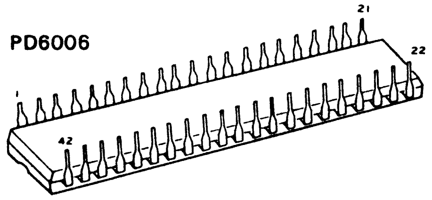
B

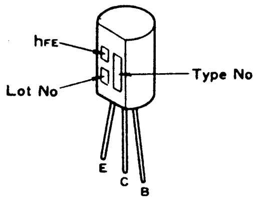
2SD882


Lot No
Type No
hFE
E
C
B

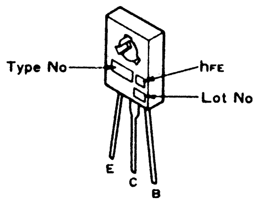
PD6006



2SC1383NC


hFE
Lot No
Type No
E
C
B

2SD1189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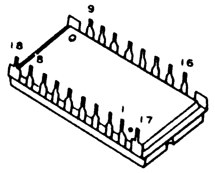
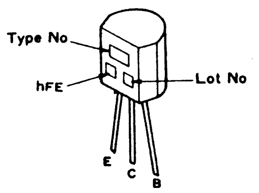
hFE
Lot No
E
C
B

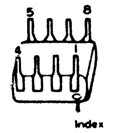
PM3001



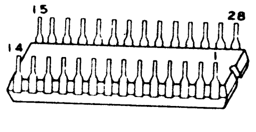
2SC2060


Type No
hFE
Lot No
E
C
B

AN6552
BA4558
NJM4558D

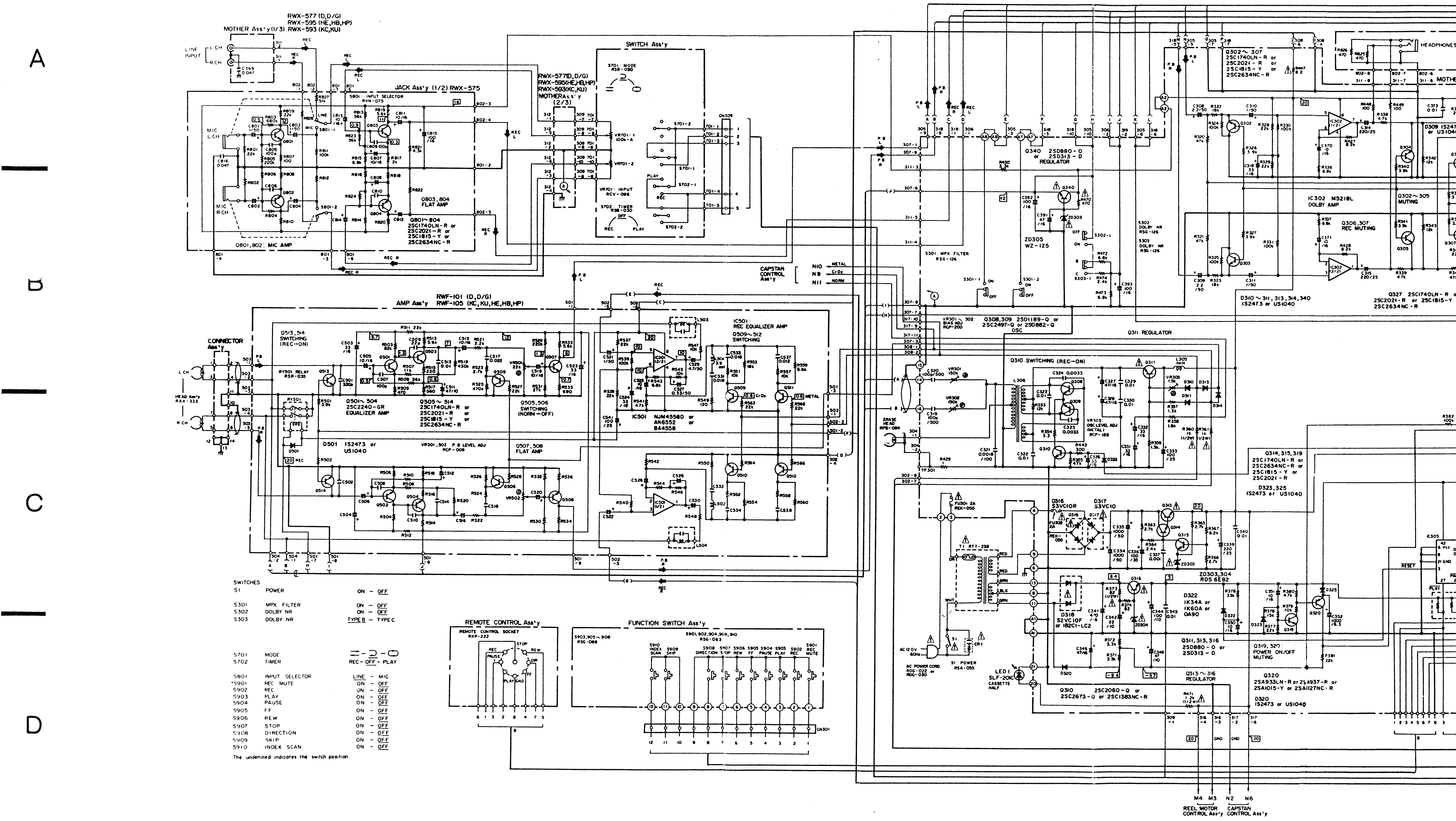


PA3012



3. SCHEMATIC DIAGRAMS

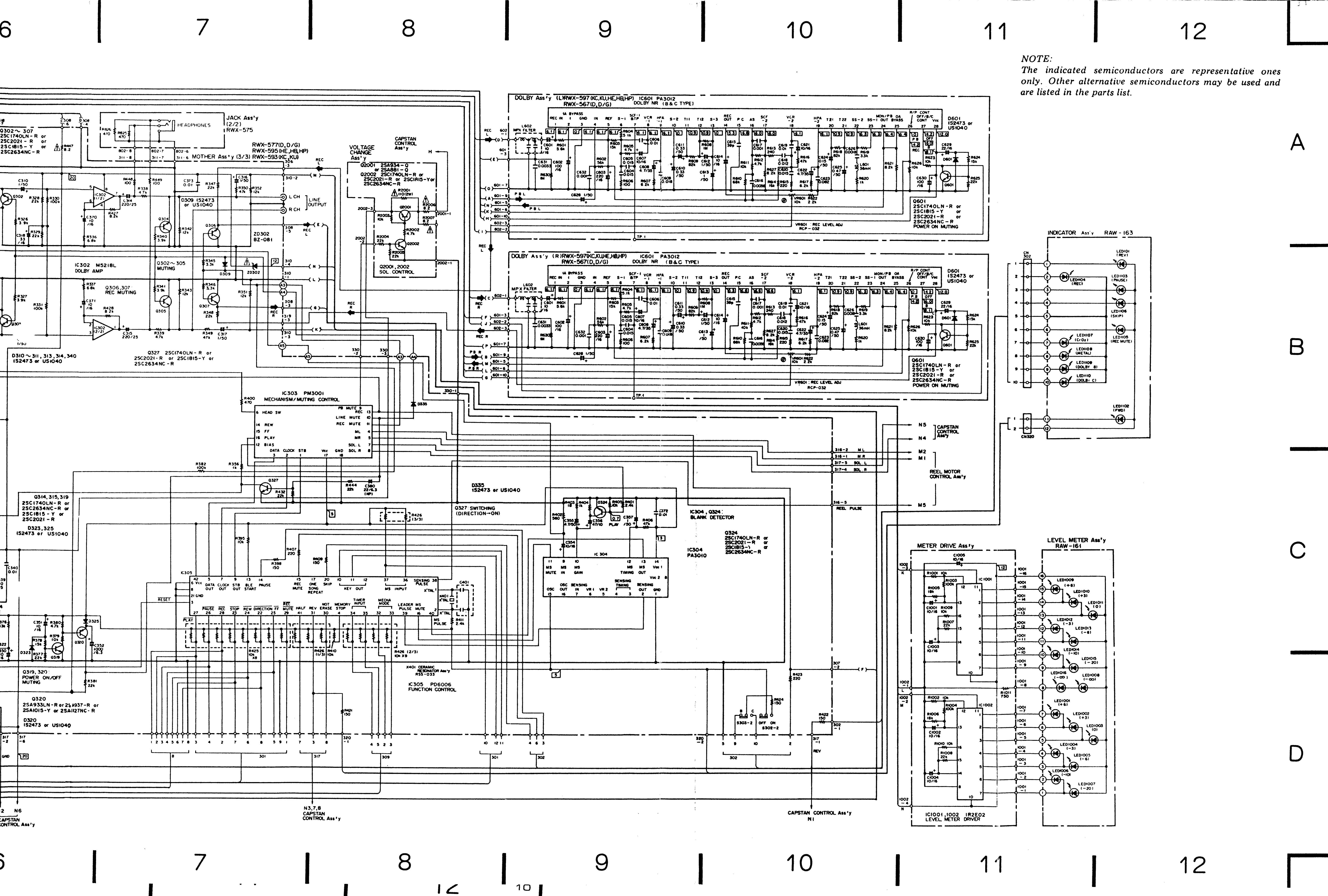
(KU AND KC TYPES)


2
3
4
5
6
7
A
B
C
D
1
RWX-577 (D,D/G)
RWX-595 (HE,HB,HP)
MOTHER Ass'y (1/3) RWX-593 (KC,KU)
LINE INPUT
L CH
R CH
JACK Ass'y (1/2) RWX-575
S801 INPUT SELECTOR RKN-075
MIC L CH
MIC R CH
Q801,802: MIC AMP
Q803,804 FLAT AMP
Q801~804
2SC1740LN-R or
2SC2021-R or
2SC1815-Y or
2SC2634NC-R
REC L
REC R
RWX-577(D,D/G)
RWX-595(HE,HB,HP)
RWX-593(KC,KU)
MOTHER Ass'y (2/3)
SWITCH Ass'y
S701 MODE RSB-080
VR701: INPUT RCV-096
S702 TIMER RSB-050
REC
OFF
PLAY
CN309
AMP Ass'y RWF-101 (D,D/G)
RWF-105 (KC,KU,HE,HB,HP)
CONNECTOR Ass'y
HEAD Ass'y RXA-333
L CH
R CH
Q513,514 SWITCHING (REC→ON)
RY501 RELAY RSR-035
Q501~504 2SC2240-GR EQUALIZER AMP
Q505~514
2SC1740LN-R or
2SC2021-R or
2SC1815-Y or
2SC2634NC-R
Q505,506 SWITCHING (NORM→OFF)
D501 1S2473 or US1040
VR501,502 P.B LEVEL ADJ RCP-009
Q507,508 FLAT AMP
IC501 NJM4558D or AN6552 or BA4558
IC501: REC EQUALIZER AMP
Q509~512 SWITCHING
METAL
CrO₂
NORM
CAPSTAN CONTROL Ass'y
N10
N9
N11
S301: MPX FILTER RSG-126
VR301~302 BIAS ADJ RCP-200
Q308,309 2SD1189-Q or 2SC2497-Q or 2SD882-Q
OSC
Q340 2SD880-O or 2SD313-D REGULATOR
ZD305 WZ-125
S302 DOLBY NR RSG-126
S303 DOLBY NR RSG-126
ERASE HEAD RPB-094
Q311: REGULATOR
Q310: SWITCHING (REC→ON)
L306
VR305 OSC LEVEL ADJ (METAL) RCP-188
IC302 M5218L DOLBY AMP
Q302~305 MUTING
Q306,307 REC MUTING
Q302~307
2SC1740LN-R or
2SC2021-R or
2SC1815-Y or
2SC2634NC-R
D310~311,313,314,340 1S2473 or US1040
Q327 2SC1740LN-R or 2SC2021-R or 2SC1815-Y or 2SC2634NC-R
HEADPHONES
Q314,315,319
2SC1740LN-R or
2SC2634NC-R or
2SC1815-Y or
2SC2021-R
D323,325 1S2473 or US1040
FU301 2A REK-058
T1 RTT-239
D316 S3VC10R
D317 S3VC10
D318 S2VC10F or 1B2C1-LC2
ZD303,304 RD5.6EB2
D322 1K34A or 1K60A or OA90
Q311,313,316 2SD880-O or 2SD313-D
Q313~316 REGULATOR
Q319,320: POWER ON/OFF MUTING
Q320 2SA933LN-R or 2SA937-R or 2SA1015-Y or 2SA1127NC-R
D320 1S2473 or US1040
Q310 2SC2673-O or 2SC1383NC-R
2SC2060-Q or
AC 120V 60Hz
AC POWER CORD RDG-022 or RDG-030
S1: POWER RSA-055
LED1 SLF-201C CASSETTE HALF
IC305
RESET
REMOTE CONTROL Ass'y
REMOTE CONTROL SOCKET RKP-222
STOP
REW
PAUSE
DIR
PLAY
GND
FF
FUNCTION SWITCH Ass'y
S903,905~908: RSG-068
S901,902,904,909,910 RSG-063
S910 INDEX SCAN
S909 SKIP
S908 DIRECTION
S907 STOP
S906 REW
S905 FF
S904 PAUSE
S903 PLAY
S902 REC
S901 REC MUTE
CN301
M4
M3
N2
N6
REEL MOTOR CONTROL Ass'y
CAPSTAN CONTROL Ass'y

SWITCHES

S1	POWER	ON – OFF
S301	MPX FILTER	ON – OFF
S302	DOLBY NR	ON – OFF
S303	DOLBY NR	TYPE B – TYPE C
S701	MODE	⇄ – ⊃ – ⊂⊃
S702	TIMER	REC – OFF – PLAY
S801	INPUT SELECTOR	LINE – MIC
•S901	REC MUTE	ON – OFF
S902	REC	ON – OFF
S903	PLAY	ON – OFF
S904	PAUSE	ON – OFF
S905	FF	ON – OFF
S906	REW	ON – OFF
S907	STOP	ON – OFF
S908	DIRECTION	ON – OFF
S909	SKIP	ON – OFF
S910	INDEX SCAN	ON – OFF

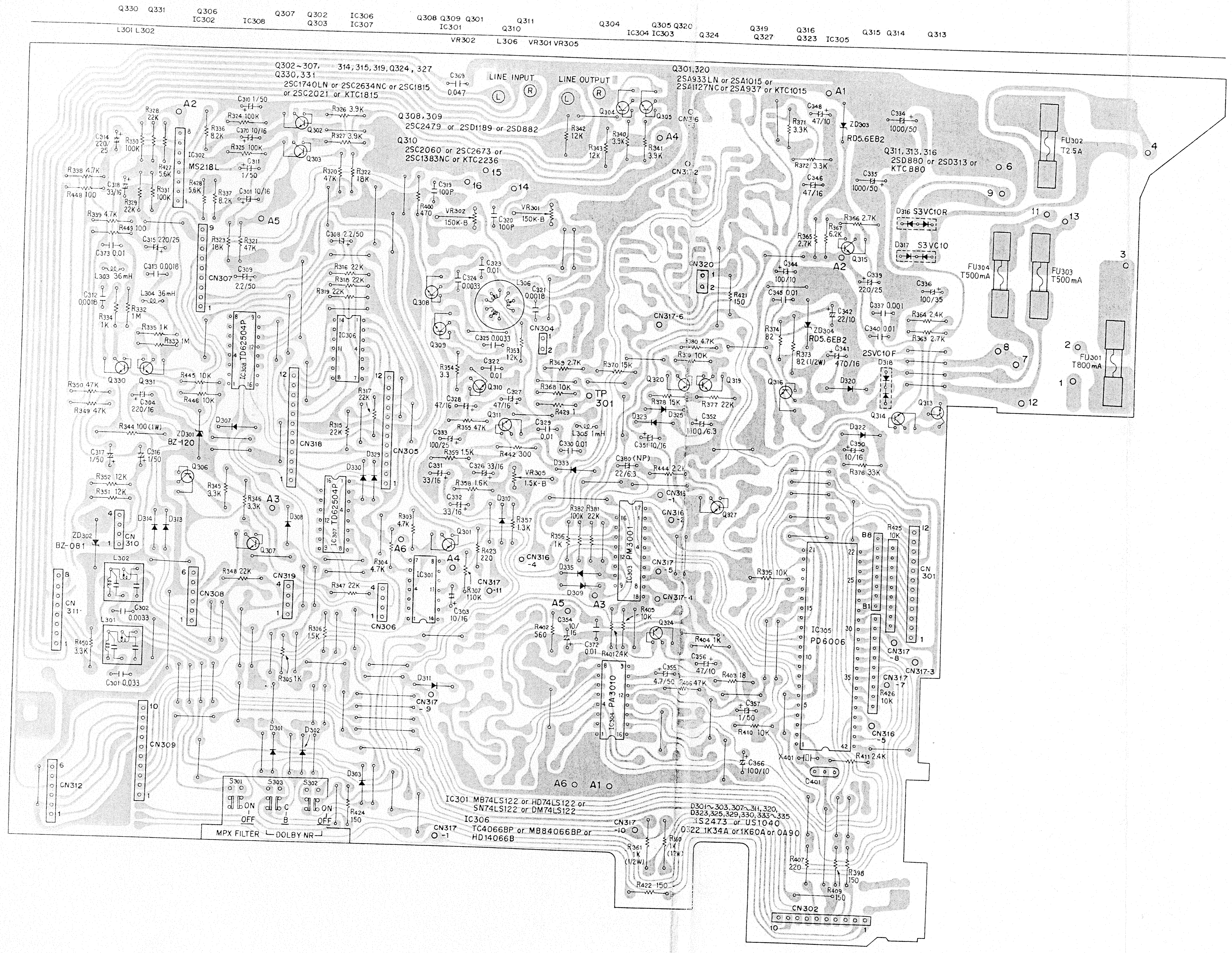
The underlined indicates the switch position.



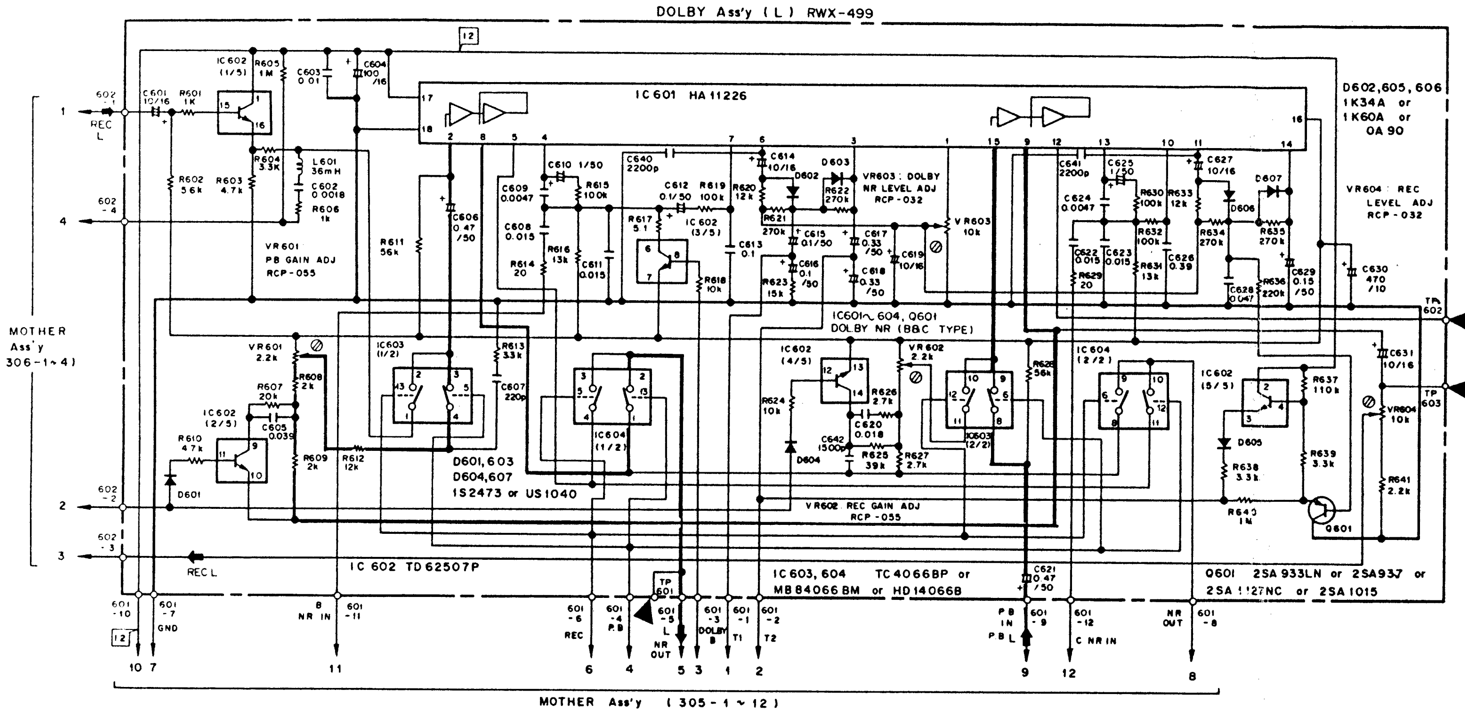
NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

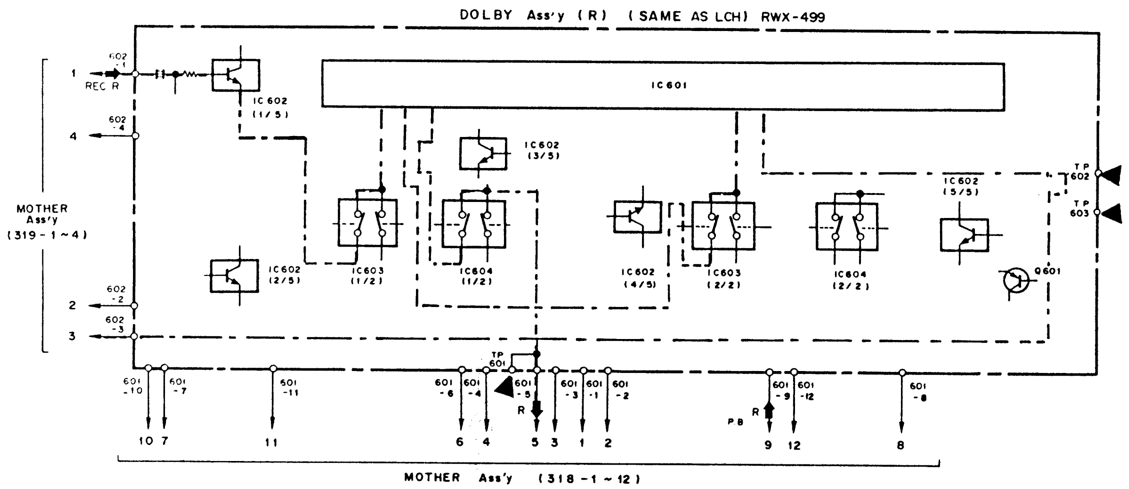
6
7
8
9
10
11
12
A
B
C
D
JACK Ass'y (2/2) RWX-575
HEADPHONES
MOTHER Ass'y (3/3) RWX-593(KC,KU)
RWX-577(D,D/G)
RWX-595(HE,HB,HP)
Q302~307 2SC1740LN-R or 2SC2021-R or 2SC1815-Y or 2SC2634NC-R
LINE OUTPUT
L CH
R CH
Q309 1S2473 or US1040
ZD302 BZ-081
IC302 M5218L DOLBY AMP
Q302~305 MUTING
Q306,307 REC MUTING
D310~311, 313, 314, 340 1S2473 or US1040
Q327 2SC1740LN-R or 2SC1815-Y or 2SC2634NC-R
VOLTAGE CHANGE Ass'y
CAPSTAN CONTROL Ass'y
Q2001 2SA934-Q or 2SA881-Q
Q2002 2SC1740LN-R or 2SC2021-R or 2SC1815-Y or 2SC2634NC-R
Q2001, 2002 SOL CONTROL
DOLBY Ass'y (L) RWX-597(KC,KU,HE,HB,HP) IC601 PA3012
RWX-567(D,D/G) DOLBY NR (B&C TYPE)
DOLBY Ass'y (R) RWX-597(KC,KU,HE,HB,HP) IC601 PA3012
RWX-567(D,D/G) DOLBY NR (B&C TYPE)
MPX FILTER
D601 1S2473 or US1040
Q601 2SC1740LN-R or 2SC1815-Y or 2SC2021-R or 2SC2634NC-R POWER ON MUTING
VR601 REC LEVEL ADJ RCP-032
INDICATOR Ass'y RAW-163
LED101 (REV)
LED104 (REC)
LED103 (PAUSE)
LED106 (SKIP)
LED107 (CrO2)
LED105 (REC MUTE)
LED108 (METAL)
LED109 (DOLBY B)
LED110 (DOLBY C)
LED102 (FWD)
CN302
CN320
IC303 PM3001 MECHANISM/MUTING CONTROL
CAPSTAN CONTROL Ass'y
REEL MOTOR CONTROL Ass'y
N5
N4
M2
M1
M5
REEL PULSE
D335 1S2473 or US1040
Q327 SWITCHING (DIRECTION→ON)
IC304, Q324 BLANK DETECTOR
Q324 2SC1740LN-R or 2SC2021-R or 2SC1815-Y or 2SC2634NC-R
IC304 PA3010
IC305 PD6006 FUNCTION CONTROL
X401 CERAMIC RESONATOR Ass'y RSS-033
Q314, 315, 319 2SC1740LN-R or 2SC2634NC-R or 2SC1815-Y or 2SC2021-R
D323, 325 1S2473 or US1040
Q319, 320 POWER ON/OFF MUTING
Q320 2SA933LN-R or 2SA937-R or 2SA1015-Y or 2SA1127NC-R
D320 1S2473 or US1040
N3,7,8 CAPSTAN CONTROL Ass'y
CAPSTAN CONTROL Ass'y N1
N6 CAPSTAN CONTROL Ass'y
METER DRIVE Ass'y
LEVEL METER Ass'y RAW-161
IC1001, 1002 IR2E02 LEVEL METER DRIVER
LED1009 (+6)
LED1010 (+3)
LED1011 (0)
LED1012 (-3)
LED1013 (-6)
LED1014 (-10)
LED1015 (-20)
LED1016 (-∞)
LED1008 (-∞)
LED1001 (+6)
LED1002 (+3)
LED1003 (0)
LED1004 (-3)
LED1005 (-6)
LED1006 (-10)
LED1007 (-20)

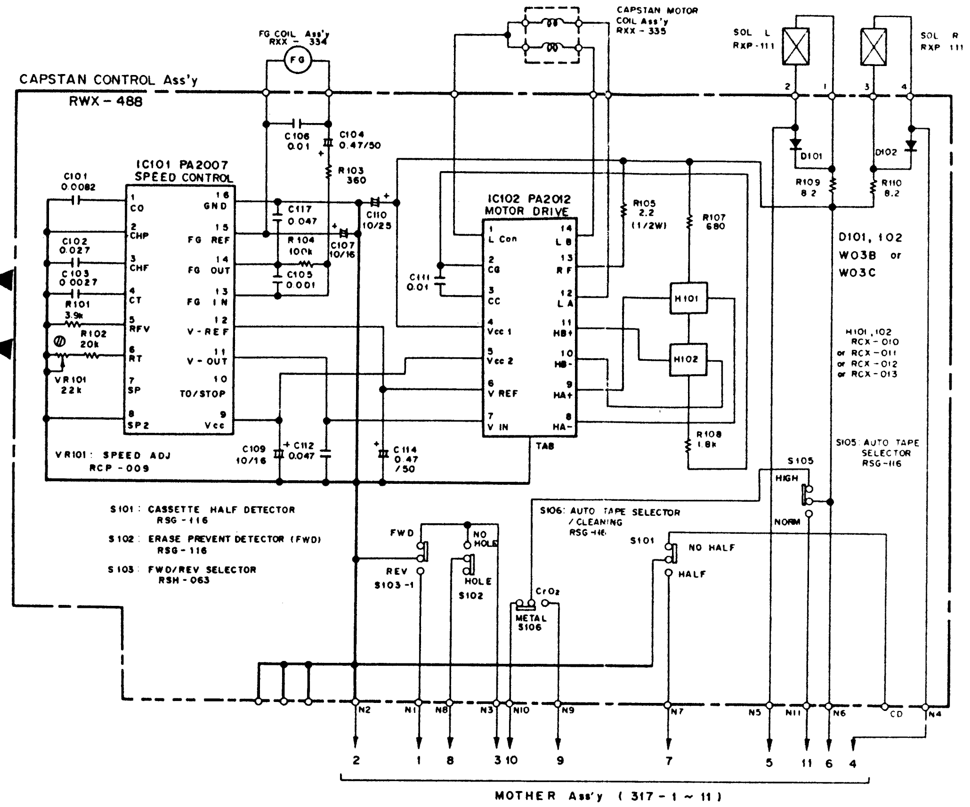
4. MOTHR ASSEBLY(RWX-545)

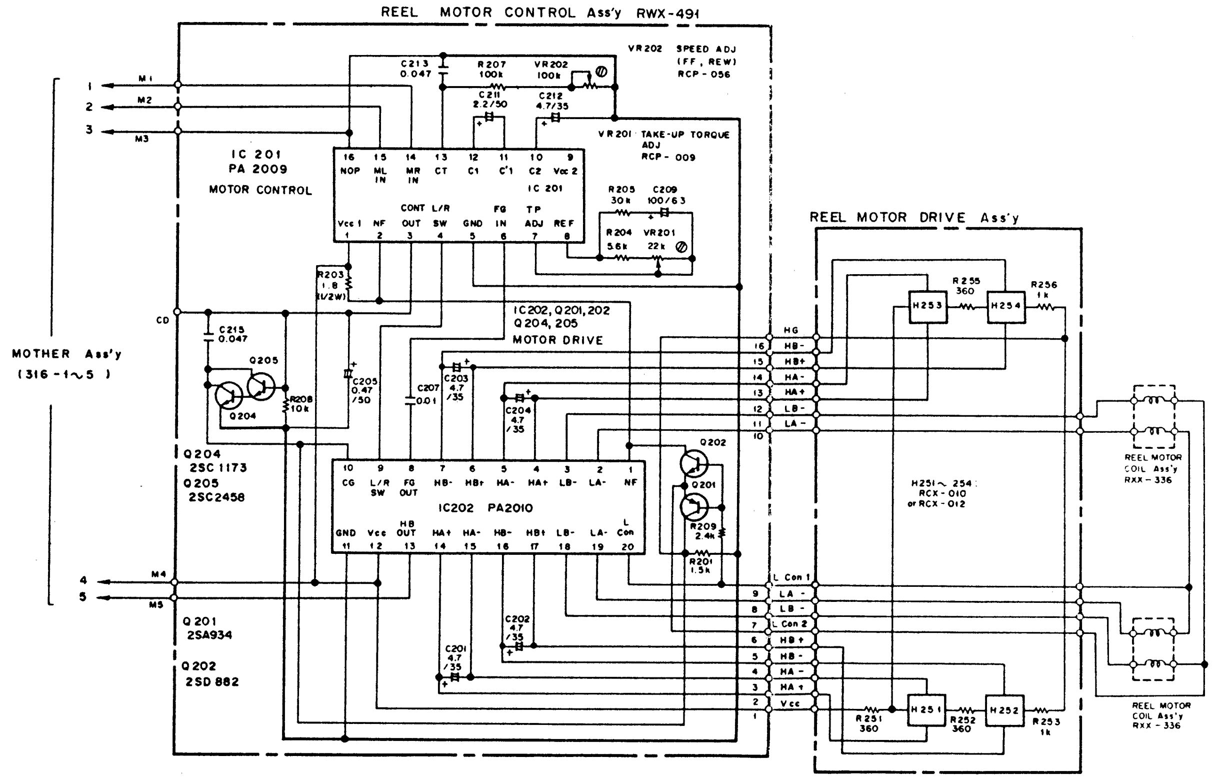

Q330 Q331
L301 L302
Q306 IC302
IC308
Q307 Q302 Q303
IC306 IC307
Q308 Q309 Q301 IC301
VR302
Q311 Q310
L306 VR301 VR305
Q304
Q305 Q320 IC304 IC303
Q324
Q319 Q327
Q316 Q323 IC305
Q315 Q314
Q313
Q302~307, 314, 315, 319, Q324, 327
Q330, 331
2SC1740LN or 2SC2634NC or 2SC1815
or 2SC2021 or KTC1815
Q308, 309
2SC2479 or 2SD1189 or 2SD882
Q310
2SC2060 or 2SC2673 or
2SC1383NC or KTC2236
LINE INPUT
LINE OUTPUT
Q301, 320
2SA933LN or 2SA1015 or
2SA1127NC or 2SA937 or KTC1015
Q311, 313, 316
2SD880 or 2SD313 or
KTC880
MS218L
TD62504P
TD62504P
PM3001
PA3010
PD6006
FU302 T2.5A
FU304 T500mA
FU303 T500mA
FU301 T800mA
D316 S3VC10R
D317 S3VC10
D318 2SVC10F
RD5.6EB2
RD5.6EB2
ZD301 BZ-120
ZD302 BZ-081
TP 301
CN302
CN309
CN312
CN311
CN308
CN319
CN306
CN301
MPX FILTER
DOLBY NR
S301 S303 S302
ON OFF
C B
IC301 MB74LS122 or HD74LS122 or
SN74LS122 or DM74LS122
IC306
TC4066BP or MB84066BP or
HD14066B
D301~303, 307~311, 320,
D323, 325, 329, 330, 333~335
1S2473 or US1040
D322 1K34A or 1K60A or 0A90

DOLBY NR and Mother Section


DOLBY Ass'y (L) RWX-499
IC601 HA11226
IC602 TD62507P
IC603, 604 TC4066BP or MB84066BM or HD14066B
D602, 605, 606 1K34A or 1K60A or OA90
D601, 603 D604, 607 1S2473 or US1040
Q601 2SA933LN or 2SA937 or 2SA1127NC or 2SA1015
VR601 PB GAIN ADJ RCP-055
VR602 REC GAIN ADJ RCP-055
VR603: DOLBY NR LEVEL ADJ RCP-032
VR604 REC LEVEL ADJ RCP-032
IC601∼604, Q601 DOLBY NR (BBC TYPE)
MOTHER Ass'y (306-1∼4)
MOTHER Ass'y (305-1∼12)
REC L
PB L
NR IN
NR OUT
C NR IN
GND
TP 601
TP 602
TP 603


DOLBY Ass'y (R) (SAME AS LCH) RWX-499
IC601
IC602 (1/5)
IC602 (2/5)
IC602 (3/5)
IC602 (4/5)
IC602 (5/5)
IC603 (1/2)
IC603 (2/2)
IC604 (1/2)
IC604 (2/2)
Q601
REC R
MOTHER Ass'y (319-1∼4)
MOTHER Ass'y (318-1∼12)


CAPSTAN CONTROL Ass'y RWX-488
IC101 PA2007 SPEED CONTROL
IC102 PA2012 MOTOR DRIVE
FG COIL Ass'y RXX-334
CAPSTAN MOTOR COIL Ass'y RXX-335
SOL L RXP-111
SOL R RXP-111
D101, 102 W03B or W03C
H101, 102 RCX-010 or RCX-011 or RCX-012 or RCX-013
VR101: SPEED ADJ RCP-009
S101: CASSETTE HALF DETECTOR RSG-116
S102: ERASE PREVENT DETECTOR (FWD) RSG-116
S103: FWD/REV SELECTOR RSH-063
S105 AUTO TAPE SELECTOR RSG-116
S106: AUTO TAPE SELECTOR / CLEANING RSG-116
MOTHER Ass'y (317-1∼11)


REEL MOTOR CONTROL Ass'y RWX-491
IC201 PA2009 MOTOR CONTROL
IC202 PA2010
IC202, Q201, 202 Q204, 205 MOTOR DRIVE
VR202 SPEED ADJ (FF, REW) RCP-056
VR201 TAKE-UP TORQUE ADJ RCP-009
Q204 2SC1173
Q205 2SC2458
Q201 2SA934
Q202 2SD882
REEL MOTOR DRIVE Ass'y
H251∼254 RCX-010 or RCX-012
REEL MOTOR COIL Ass'y RXX-336
MOTHER Ass'y (316-1∼5)

1. RESISTORS:
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%tolerance

2. CAPACITORS
Indicated in capacity (μF) voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE
[ ] DC voltage (V) at no input signal

4. OTHERS:
➡ Signal route
⊘ Adjusting point
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

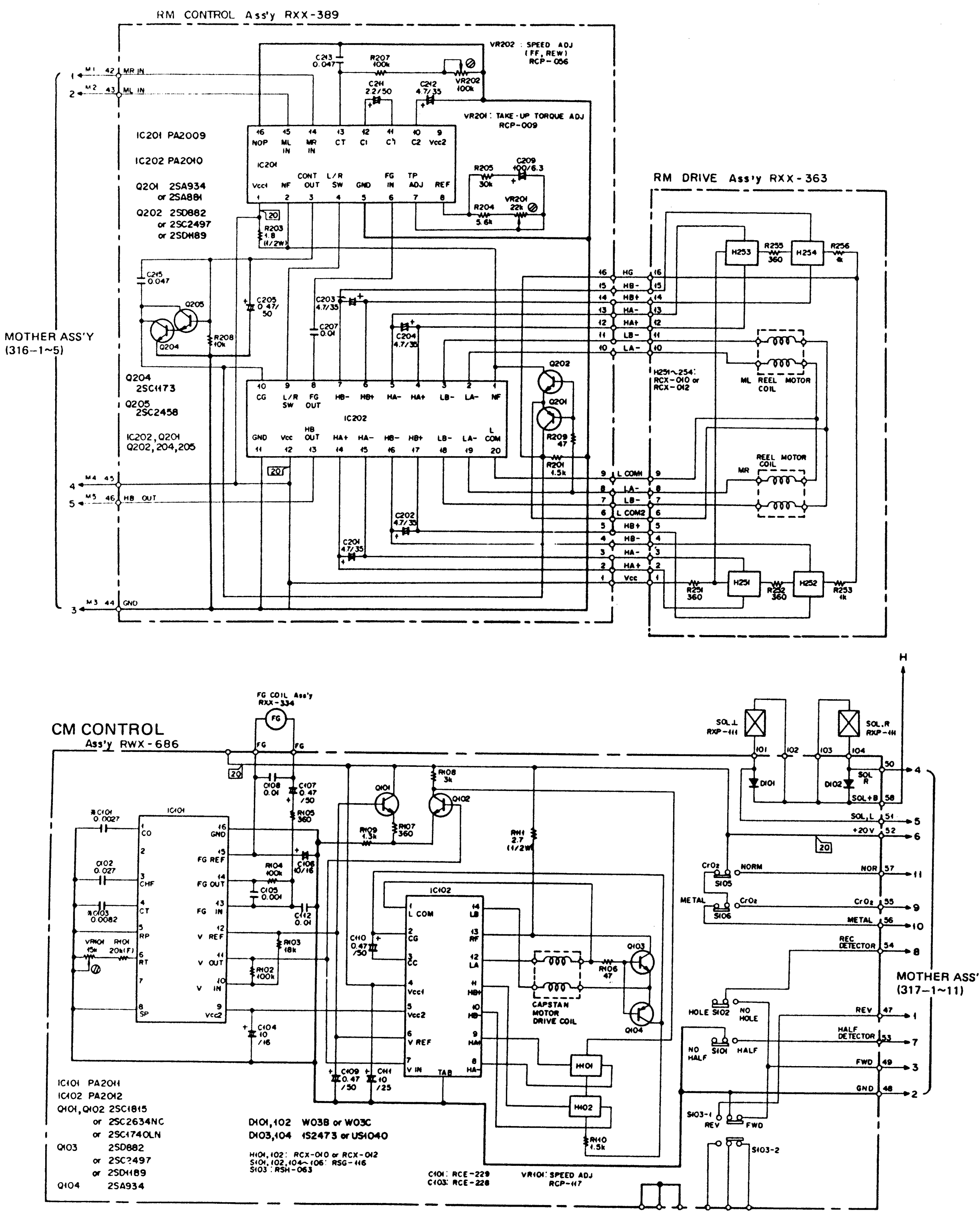
SWITCHES:
S101: CASSETTE HALF DETECTOR NO HALF – HALF
S102: ERASE PREVENT DETECTOR (FWD) HOLE – NO HOLE
S103: FWD/REV SELECTOR FWD – REV

S105: AUTO TAPE SELECTOR NORM – HIGH
S106: AUTO TAPE SELECTOR / CLEANING CrO2/ON – METAL/OFF

The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

NOTE;
Playback signal route ———
Recording signal route – – –


RM CONTROL Ass'y RXX-389
RM DRIVE Ass'y RXX-363
MOTHER ASS'Y (316-1~5)
M1 42 MR IN
M2 43 ML IN
M4 45
M5 46 HB OUT
M3 44 GND
IC201 PA2009
IC202 PA2010
Q201 2SA934 or 2SA881
Q202 2SD882 or 2SC2497 or 2SD1189
Q204 2SC1173
Q205 2SC2458
IC202, Q201 Q202, 204, 205
VR202 : SPEED ADJ (FF, REW) RCP-056
VR201 : TAKE-UP TORQUE ADJ RCP-009
H251~254: RCX-010 or RCX-012
ML REEL MOTOR COIL
MR REEL MOTOR COIL
CM CONTROL Ass'y RWX-686
FG COIL Ass'y RXX-334
SOL.L RXP-111
SOL.R RXP-111
MOTHER ASS'Y (317-1~11)
CAPSTAN MOTOR DRIVE COIL
IC101 PA2011
IC102 PA2012
Q101, Q102 2SC1815 or 2SC2634NC or 2SC1740LN
Q103 2SD882 or 2SC2497 or 2SD1189
Q104 2SA934
D101, 102 W03B or W03C
D103, 104 1S2473 or US1040
H101, 102: RCX-010 or RCX-012
S101, 102, 104~106: RSG-116
S103 : RSH-063
C101: RCE-229
C103: RCE-228
VR101: SPEED ADJ RCP-117

SWITCHES
CM CONTROL Ass'y
S101 : CASSETTE HALF DETECTOR NO HALF – HALF
S102 : ERASE PREVENT DETECTOR (FWD) NO HOLE – HOLE
S103 FWD/REV SELECTOR FWD – REV
S105 AUTO TAPE SELECTOR NORM – CrO2
S106 AUTO TAPE SELECTOR CrO2 – METAL
The underlined indicates the switch position

RM Full Assembly B (RXX-389)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	PA2009	IC201
★★	PA2010	IC202
★★	2SA934 (2SA881)	Q201
★★	2SD882 (2SC2497-R) (2SD1189)	Q202
★★	2SC2458	Q205
★★	2SC1173	Q204

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 4R7M 35	C201, C204, C212
	CEA R47M 50	C205
	CEA 2R2M 50	C211
	CEA 101M 6R3	C209
	CEA 4R7M 35	C202, C203
	CQMA 373K 50	C213
	CKDYF 103Z 50	C207
	CKDYF 473Z 50	C215

RESISTORS

Note: When ordering resistors, convert the resistance value into code from, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-009	VR201 Semi-fixed (22k-B)
★	RCP-056	VR202 Semi-fixed (100k-B)
	RD¼PM □□□ J	R201, R204, R205, R207, R209
	RD½PS 1R8J	R203

OTHERS

Mark	Part No.	Symbol & Description
	REE-051	Spacer
	RKH-005	Transistor holder
	RBA-026	Screw

RM Assembly (RXX-363)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★	RCX-010 (RCX-012)	H251–H254 Hall device A (Hall device C)
★	TLN-104	D251

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PM □□□ J	R251–R253, R255, R256

CM Control Assembly (RWX-686)

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	PA2011	IC101
★★	PA2012	IC102
★★	2SC1815 (2SC2634NC) (2SC1740LN)	Q101, Q102
★★	2SA934	Q104
★★	2SD882 (2SC2497-R) (2SD1189)	Q103
★	W03B (W03C)	D101, D102
★	RCX-010 (RCX-012)	H101, H102 Hall device A (Hall device C)

SWITCHES

Mark	Part No.	Symbol & Description
★★	RSG-116	S101, S102, S105, S106 Push switch
★★	RSH-063	S103 Slide switch

CAPACITORS

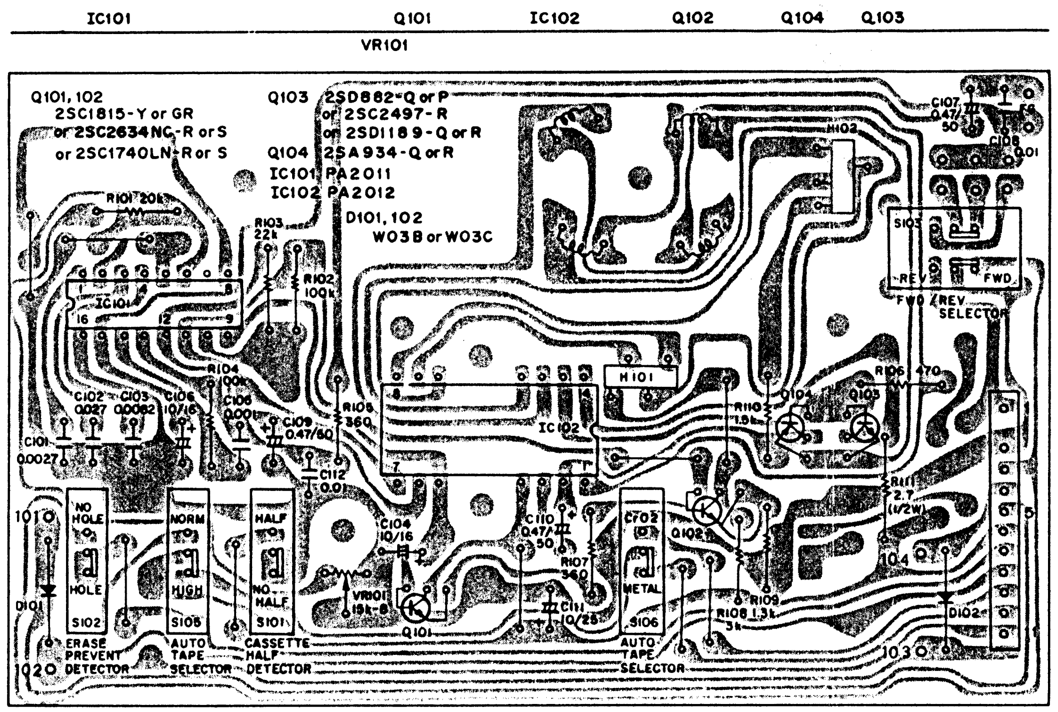
Mark	Part No.	Symbol & Description
	RCE-229	C101 Film (0.0027)
	CEA R47M 50	C107, C109, C110
	CEA 100M 16	C104, C106
	CEA 100M 25	C111
	CQMA 273K 50	C102
	RCE-228	C103 Film (0.0082)
	CKDYF 102Z 50	C105
	CKDYF 103Z 50	C108, C112

RESISTORS

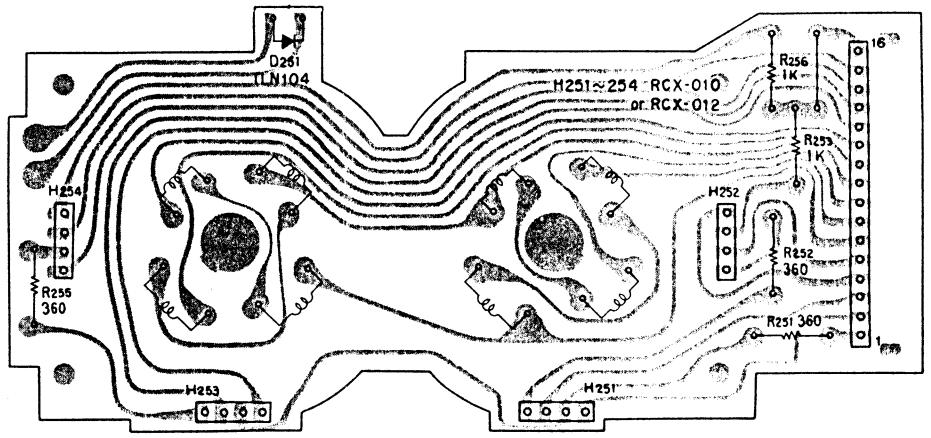
Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	RCP-117	VR101 Semi-fixed (15k-B)
	RN¼PQ 203F	R100
	RD½PS 2R7J	R111
	RD¼PM □□□ J	Other resistors

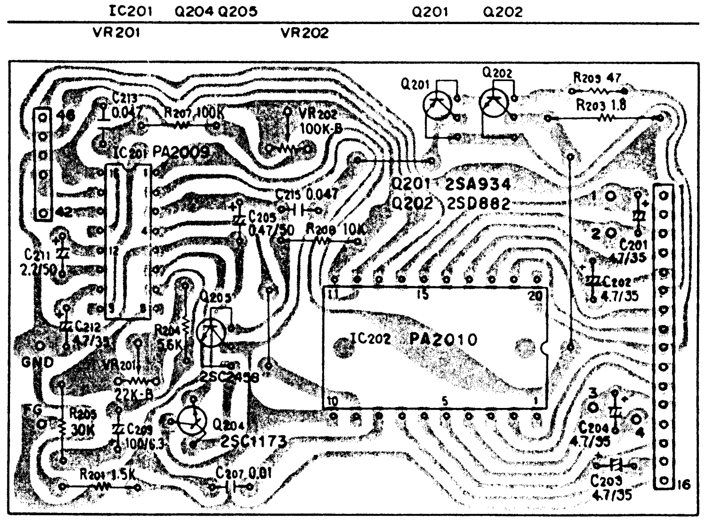
CM CONTROL Ass'y RWX-686


IC101
Q101
VR101
IC102
Q102
Q104
Q103
Q101, 102
2SC1815-Y or GR
or 2SC2634NC-R or S
or 2SC1740LN-R or S
Q103 2SD882-Q or P
or 2SC2497-R
or 2SD1189-Q or R
Q104 2SA934-Q or R
IC101 PA2011
IC102 PA2012
D101, 102
W03B or W03C
R101 20k
R103 22k
R102 100k
IC101
1
4
8
16
12
9
R104 100k
C102 0.027
C103 0.0082
C106 10/16
C105 0.001
C109 0.47/50
R105 360
C101 0.0027
C112 0.01
101
102
D101
NO HOLE
HOLE
S102
ERASE PREVENT DETECTOR
NORM
HIGH
S105
AUTO TAPE SELECTOR
HALF
NO HALF
S101
CASSETTE HALF DETECTOR
C104 10/16
VR101 15k-B
Q101
IC102
7
14
C110 0.47/50
R107 360
C111 10/25
C702
METAL
S106
AUTO TAPE SELECTOR
Q102
R108 1.3k
3k
R109
H101
H102
R110 1.5k
Q104
Q103
R106 470
R111 2.7 (1/2W)
104
103
D102
5
C107 0.47/50
F6
C108 0.01
S103
REV
FWD
FWD/REV SELECTOR

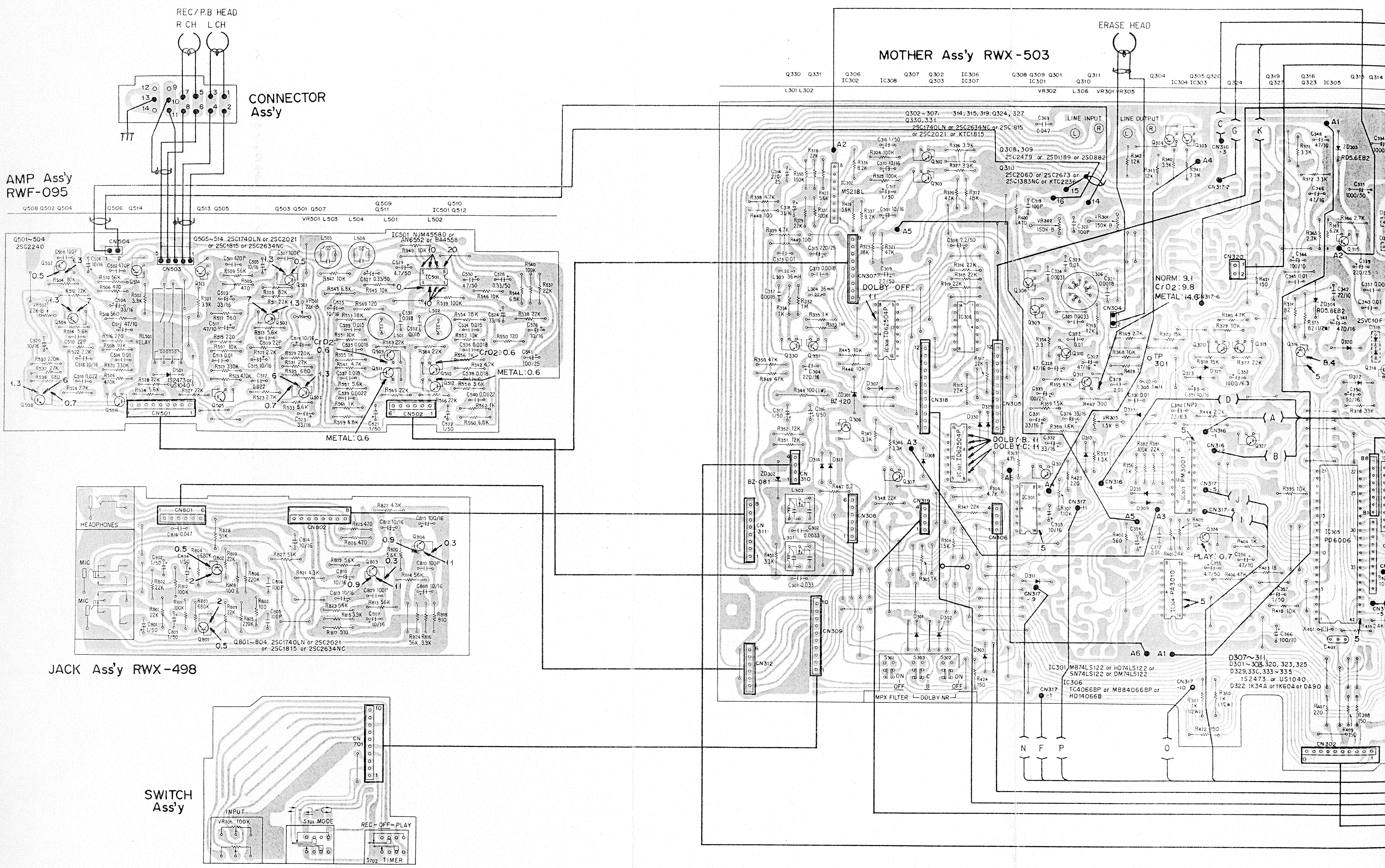
RM DRIVE Ass'y RXX-363

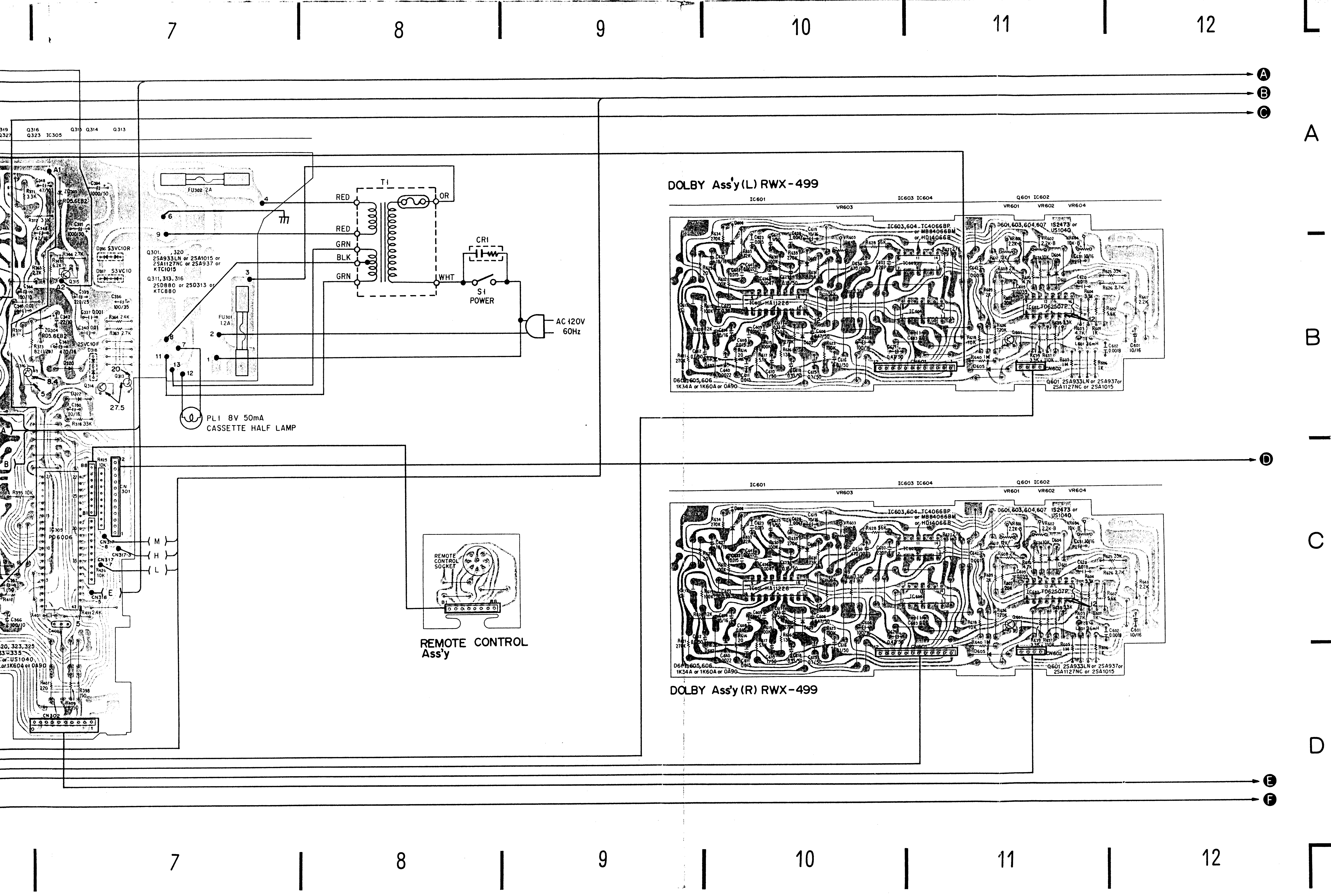

D251
TLN104
H251~254 RCX-010
or RCX-012
R256 1K
R253 1K
R252 360
R251 360
R255 360
H254
H252
H253
H251
16
1

RM CONTROL Ass'y RXX-389

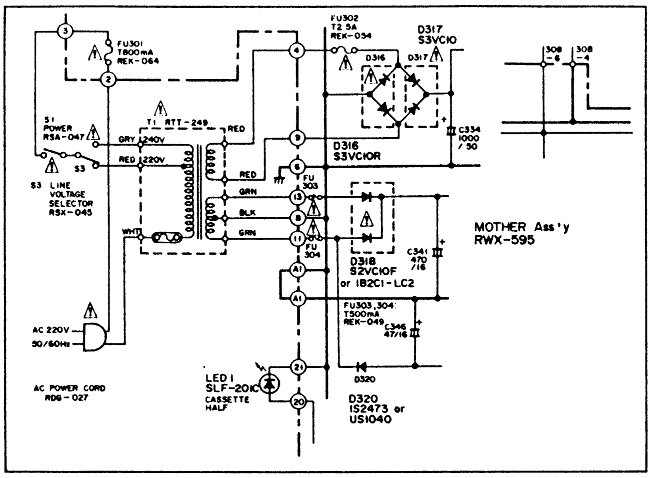

IC201
Q204 Q205
Q201
Q202
VR201
VR202
Q201
Q202
R209 47
R203 1.8
C213 0.047
R207 100K
VR202 100K-B
IC201 PA2009
46
42
16
1
4
12
9
8
C215 0.047
C205 0.47/50
R208 10K
Q201 2SA934
Q202 2SD882
C211 2.2/50
C212 4.7/35
R204 5.6K
Q205
2SC2458
VR201 22K-B
GND
FG
R205 30K
C209 100/6.3
Q204
2SC1173
R201 1.5K
C207 0.01
IC202 PA2010
11
15
20
10
5
1
C201 4.7/35
C202 4.7/35
C204 4.7/35
C203 4.7/35
1
2
3
4
16

7. P.C. BOARDS CONNECTION DIAGRAM

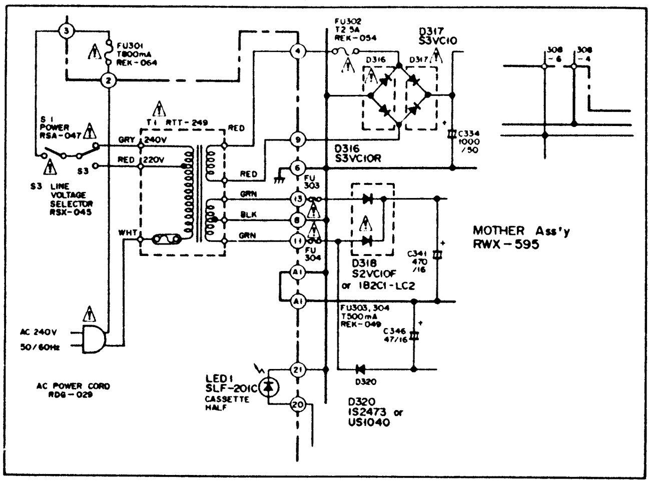

REC/P.B HEAD
R CH
L CH
CONNECTOR Ass'y
AMP Ass'y
RWF-095
CN503
CN504
CN501
CN502
IC501 NJM4558D or AN6552 or BA4558
Q505~514 2SC1740LN or 2SC2021 or 2SC1815 or 2SC2634NC
Q501~504 2SC2240
METAL: 0.6
JACK Ass'y RWX-498
HEADPHONES
MIC
CN801
CN802
Q801~804 2SC1740LN or 2SC2021 or 2SC1815 or 2SC2634NC
SWITCH Ass'y
INPUT
VR701 100K
S701 MODE
REC-OFF-PLAY
S702 TIMER
CN 701
MOTHER Ass'y RWX-503
ERASE HEAD
LINE INPUT
LINE OUTPUT
Q302~307, 314, 315, 319, Q324, 327 Q330, 331 2SC1740LN or 2SC2634NC or 2SC1815 or 2SC2021 or KTC1815
Q308, 309 2SC2479 or 2SD1189 or 2SD882
Q310 2SC2060 or 2SC2673 or 2SC1383NC or KTC2236
DOLBY OFF
DOLBY-B
DOLBY-C
NORM: 9.1
CrO2: 9.8
METAL: 14.6
PLAY: 0.7
TP 301
IC301 MB74LS122 or HD74LS122 or SN74LS122 or DM74LS122
IC306 TC4066BP or MB84066BP or HD14066B
D307~311, D301~303, 320, 323, 325 D329, 330, 333~335 1S2473 or US1040
D322 1K34A or 1K60A or OA90
MPX FILTER
DOLBY NR
CN302
CN309
CN312
CN306
CN308
CN318
CN305
CN320
N
F
P
O


7
8
9
10
11
12
A
B
C
D
A
B
C
D
E
F
Q316 Q323 IC305
Q315 Q314 Q313
FU302 2A
T1
RED
RED
GRN
BLK
GRN
OR
WHT
CR1
S1 POWER
AC 120V 60Hz
FU301 1.2A
Q301, 320 2SA933LN or 2SA1015 or 2SA1127NC or 2SA937 or KTC1015
Q311, 313, 316 2SD880 or 2SD313 or KTC880
D316 S3VC10R
D317 S3VC10
PL1 8V 50mA CASSETTE HALF LAMP
IC305 PD6006
CN301
CN317
CN316
CN302
M
H
L
E
REMOTE CONTROL SOCKET
REMOTE CONTROL Ass'y
DOLBY Ass'y (L) RWX-499
DOLBY Ass'y (R) RWX-499
IC601
VR603
IC603 IC604
Q601 IC602
VR601 VR602 VR604
IC603,604 TC4066BP or MB84066BM or HD14066B
D601,603,604,607 1S2473 or US1040
IC601 HA11226
IC602 TD62507P
D602,605,606 1K34A or 1K60A or OA90
Q601 2SA933LN or 2SA937 or 2SA1127NC or 2SA1015
CN601
CN602

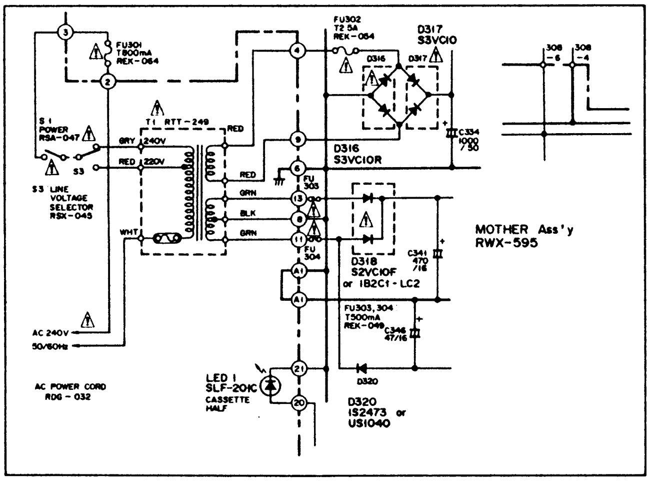
POWER SUPPLY CIRCUIT FOR HE TYPE


FU301
T800mA
REK-064
FU302
T2.5A
REK-054
D317
S3VC10
D316
S1
POWER
RSA-047
S3
S3 LINE
VOLTAGE
SELECTOR
RSX-045
T1 RTT-249
GRY 240V
RED 220V
RED
GRN
BLK
GRN
WHT
D316
S3VC10R
FU
303
FU
304
D318
S2VC10F
or 1B2C1-LC2
C334
1000
/50
C341
470
/16
FU303, 304
T500mA
REK-049
C346
47/16
308
-6
308
-4
MOTHER Ass'y
RWX-595
AC 220V
50/60Hz
AC POWER CORD
RDG-027
LED1
SLF-201C
CASSETTE
HALF
D320
D320
1S2473 or
US1040
3
2
4
9
6
13
8
11
A1
A1
21
20

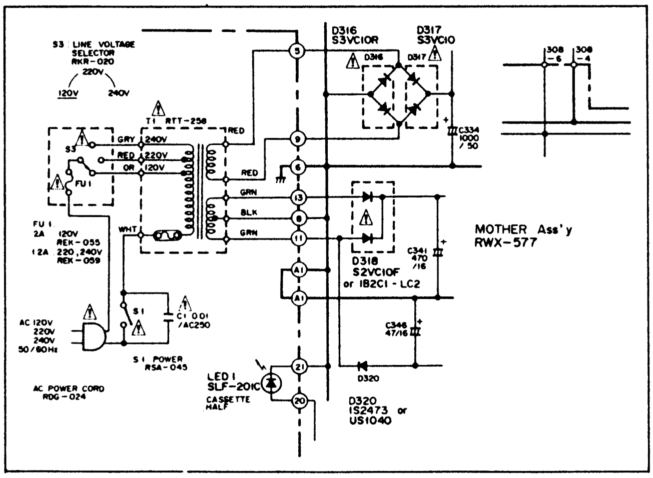
POWER SUPPLY CIRCUIT FOR HP TYPE


FU301
T800mA
REK-064
FU302
T2.5A
REK-054
D317
S3VC10
D316
S1
POWER
RSA-047
S3
S3 LINE
VOLTAGE
SELECTOR
RSX-045
T1 RTT-249
GRY 240V
RED 220V
RED
GRN
BLK
GRN
WHT
D316
S3VC10R
FU
303
FU
304
D318
S2VC10F
or 1B2C1-LC2
C334
1000
/50
C341
470
/16
FU303, 304
T500mA
REK-049
C346
47/16
308
-6
308
-4
MOTHER Ass'y
RWX-595
AC 240V
50/60Hz
AC POWER CORD
RDG-029
LED1
SLF-201C
CASSETTE
HALF
D320
D320
1S2473 or
US1040

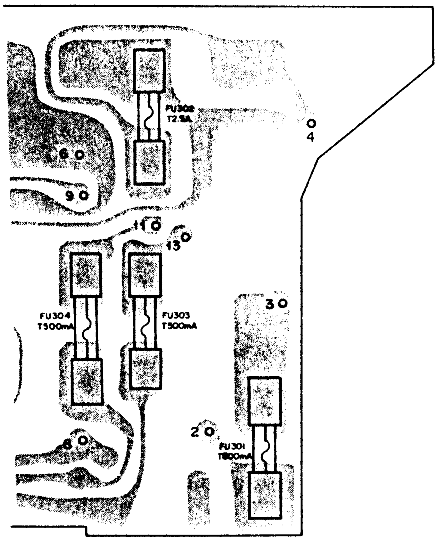
POWER SUPPLY CIRCUIT FOR HB TYPE


FU301
T800mA
REK-064
FU302
T2.5A
REK-054
D317
S3VC10
D316
S1
POWER
RSA-047
S3
S3 LINE
VOLTAGE
SELECTOR
RSX-045
T1 RTT-249
GRY 240V
RED 220V
RED
GRN
BLK
GRN
WHT
D316
S3VC10R
FU
303
FU
304
D318
S2VC10F
or 1B2C1-LC2
C334
1000
/50
C341
470
/16
FU303, 304
T500mA
REK-049
C346
47/16
308
-6
308
-4
MOTHER Ass'y
RWX-595
AC 240V
50/60Hz
AC POWER CORD
RDG-032
LED1
SLF-201C
CASSETTE
HALF
D320
D320
1S2473 or
US1040

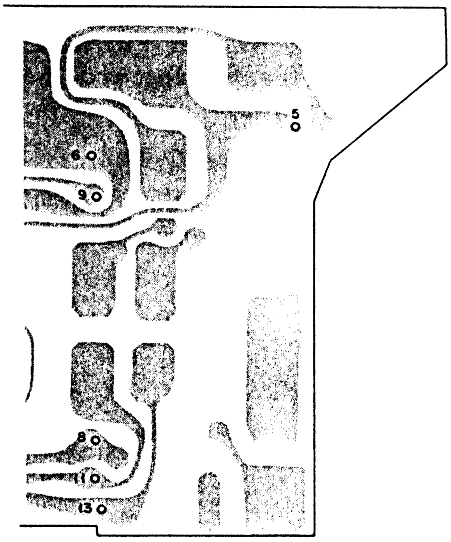
POWER SUPPLY CIRCUIT FOR D, D/G TYPE


S3 LINE VOLTAGE
SELECTOR
RKR-020
220V
120V
240V
D316
S3VC10R
D317
S3VC10
D316
D317
T1 RTT-258
S3
GRY 240V
RED 220V
OR 120V
FU1
RED
RED
GRN
BLK
GRN
WHT
FU1
2A 120V
REK-055
1.2A 220,240V
REK-059
S1
C1 0.01
/AC250
S1 POWER
RSA-045
AC 120V
220V
240V
50/60Hz
AC POWER CORD
RDG-024
D318
S2VC10F
or 1B2C1-LC2
C334
1000
/50
C341
470
/16
C346
47/16
308
-6
308
-4
MOTHER Ass'y
RWX-577
LED1
SLF-201C
CASSETTE
HALF
D320
D320
1S2473 or
US1040
5
9
6
13
8
11
A1
A1
21
20

For HE, HB and HP models (Mother Ass'y)


FU302
T2.5A
4
6
9
11
13
3
FU304
T500mA
FU303
T500mA
8
2
FU301
T800mA

For D and D/G models (Mother Ass'y)



12. ADJUSTMENTS

12.1 MECHANICAL ADJUSTMENTS

12.1.1 Pinch roller pressure adjustment

1. Set to forward direction, and switch to playback mode without loading a cassette half.
2. Using a tension gauge as shown in Fig. 12-1, gently press against the pinch roller arm. The tension gauge reading should lie between 250g and 400g at the moment that the pinch roller is separated from the capstan, and the capstan stops rotating.
3. If the reading lies outside the above range, replace the pinch roller pressure spring.
4. Set to reverse direction and measure the pinch roller pressure for the pinch roller on the other side in the same way as described above.

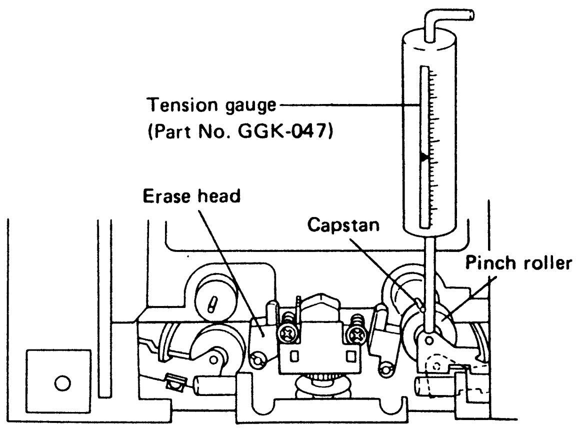

Tension gauge
(Part No. GGK-047)
Erase head
Capstan
Pinch roller

Fig. 12-1 Pinch roller pressure adjustment

12.1.2 Preliminary azimuth adjustment

1. Set to forward direction, and switch to stop mode.
2. Using a screwdriver as shown in Fig. 12-2, adjust gap A between the housing and the revolving base to 1.5mm by turning screw ❶.
3. Set to reverse direction.
4. Using the screwdriver again, adjust gap B between the housing and the revolving base to 1.5mm by turning screw ❷.

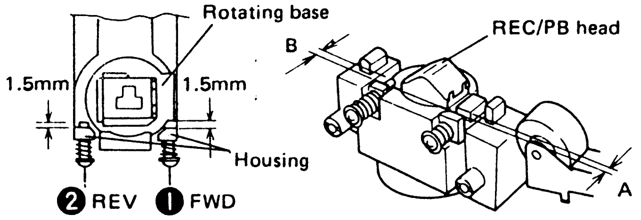

Rotating base
B
REC/PB head
1.5mm
1.5mm
Housing
❷ REV
❶ FWD
A

Fig. 12-2 Azimuth adjustment point

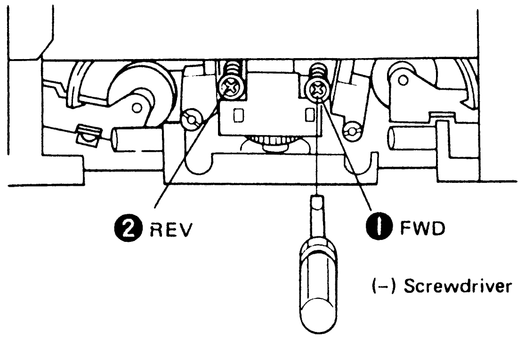

❷ REV
❶ FWD
(–) Screwdriver

Fig. 12-3 Azimuth preadjustment

12.1.3 Tape travel adjustment

1. Set to forward direction, load a mirror-equipped cassette, and switch to playback mode.
2. Adjust nut ❶ to ensure that no tape curling occurs in the guide section of the recording and erase heads as shown in Fig. 12-4.
3. Set to reverse direction.
4. Adjust nut ❷ to ensure that no tape curling occurs in the guide section of the recording and dummy heads.
5. Check that there is no tape curling during repeated forward and reverse tape travel.

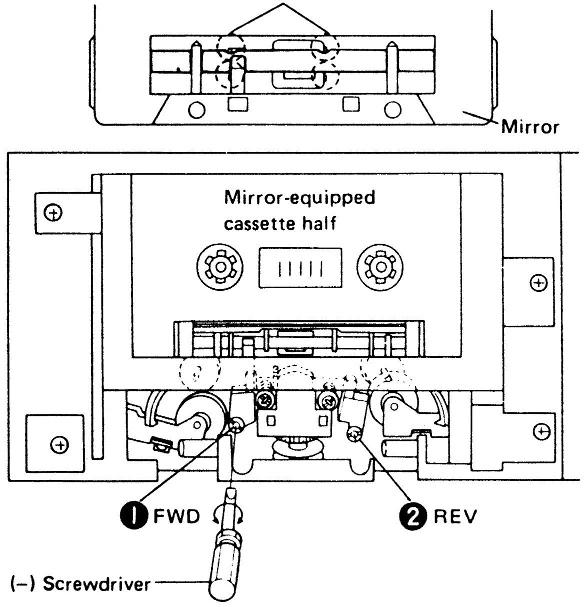

Check point (guide section)
Mirror
Mirror-equipped
cassette half
❶ FWD
❷ REV
(–) Screwdriver

Fig. 12-4 Tape travel adjustment

12.1.4 Fast forward and rewind rotational speed adjustment

1. Connect a frequency counter between the FG and GND terminals on the reel motor control ass'y (see Fig. 12-5).
2. Set to forward direction, and switch to fast forward mode.
3. Adjust the frequency counter reading to 72Hz ±2Hz by means of VR202.
4. Switch to rewind mode, and check that the frequency counter reading lies in the 72Hz ±5Hz range.

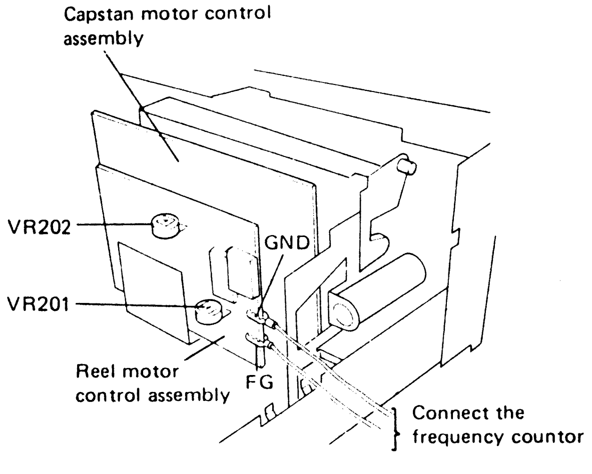

Capstan motor control
assembly
VR202
GND
VR201
Reel motor
control assembly
FG
Connect the
frequency countor

Fig. 12-5 FF/REW Rotating speed adjustment

12.1.5 Playback mode winding torque adjustment

1. Set to forward direction, mount a cassette-type torque meter, and switch to playback mode.
2. Adjust the winding torque to 45g.cm ±5g.cm by VR201.
3. Set to reverse direction.
4. Check that the winding torque is 45g.cm ±10g.cm.

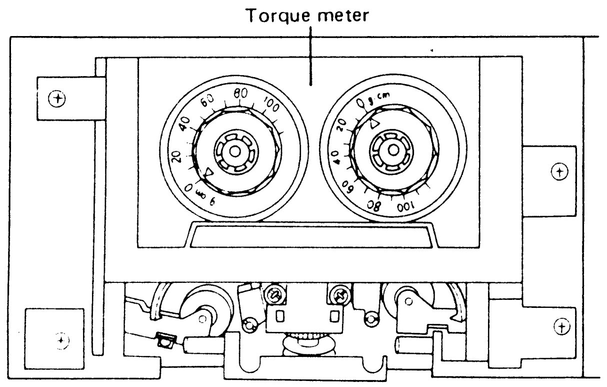

Torque meter

Fig. 12-6 Take-up torque adjustment

12.1.6 Tape speed adjustment

1. Connect the frequency counter to the OUTPUT terminals.
2. Set to forward direction, load a STD-301 test tape wound to the start of the tape, and switch to playback mode.
3. Adjust the frequency counter reading to 3005Hz ±20Hz by VR101.
4. Set to reverse direction, wind the test tape to the start of the tape, and switch to playback mode.
5. Check that the frequency counter reading lies within the 3005Hz ±20Hz range.

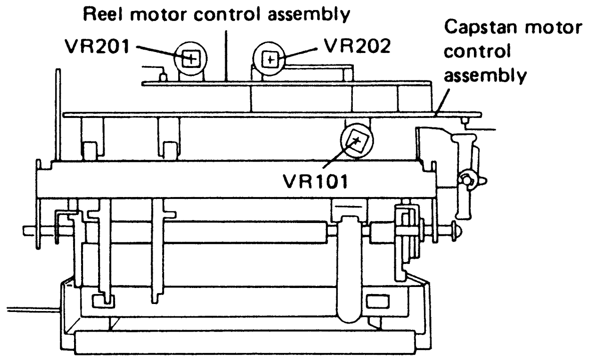

Reel motor control assembly
VR201
VR202
Capstan motor
control
assembly
VR101

Fig. 12-7 Tape speed adjustment

12.1.7 Fast travel torque check

1. Set to forward direction, mount a cassette-type torque meter, and switch to fast forward mode.
2. Check that the fast forward torque is within the 100g.cm ±30g.cm range.
3. Switch the mode to rewind, and again check that the rewind torque lies within the 100g.cm ±30g.cm range.

12.1.8 Back-tension torque check

1. Set to forward direction, mount a cassette-type torque meter, and switch to playback mode.
2. Check that the supply reel back-tension lies within the 3.5g.cm ±1.5g.cm range.
3. Reverse the direction.
4. Check that the supply reel back-tension again lies within the 3.5g.cm ±1.5g.cm range.

12. RÉGLAGE

12.1 RÉGLAGES MÉCANIQUES

12.1.1 Réglage de la pression du rouleau de serrage

1. Faire marcher le magnétophone en direction avant et commuter le mode de lecture sans insérer de cassette.
2. Pousser doucement contre le bras du rouleau de serrage avec un étalon de tension comme indiqué Fig. 12-1. La lecture doit se situer entre 250 et 400gr. au moment où le rouleau de serrage est séparé du cabestan, et où le cabestan se arrêter à tourner.
3. Si la lecture se situe hors de ces limites, remplacer le ressort de serrage.
4. Faire marcher en direction opposée et mesurer la pression du rouleau de serrage de l'autre côté de la même manière que précedemment.

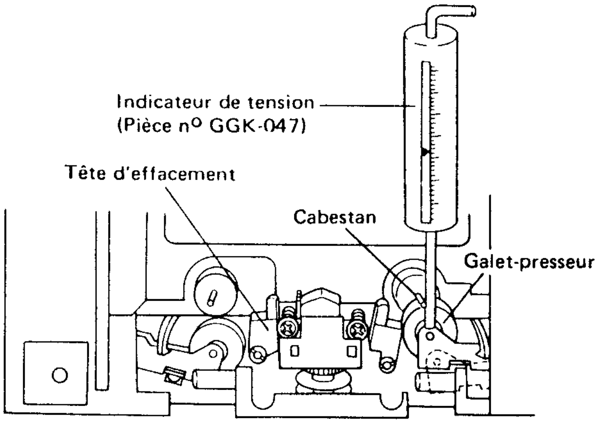

Indicateur de tension
(Pièce n° GGK-047)
Tête d'effacement
Cabestan
Galet-presseur

Fig. 12-1 Réglage de la pression du rouleau de serrage

12.1.2 Réglage préliminaire d'azimuth

1. Mettre en marche le magnétophone vers l'avant, en mode d'arrêt.
2. Au moyen d'un tournevis, comme il est montré Fig. 12-2 régler l'intervalle A à 1,5mm. entre le logement et la base tournante, en tournant la vis ❶ .
3. Faire marcher en direction inverse.
4. Au moyen du même tournevis, régler l'intervalle B à 1,5mm entre le logement et la base tournante, en tournant la vis ❷ .

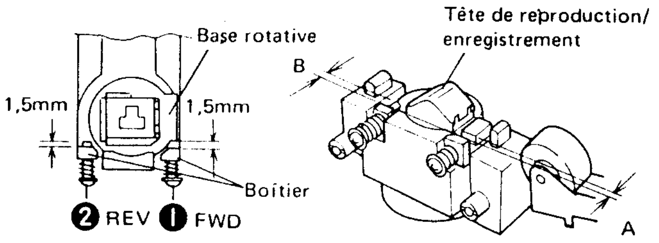

Base rotative
Tête de reproduction/
enregistrement
B
1,5mm
1,5mm
Boîtier
❷ REV
❶ FWD
A

Fig. 12-2 Réglage préliminaire d'azimuth

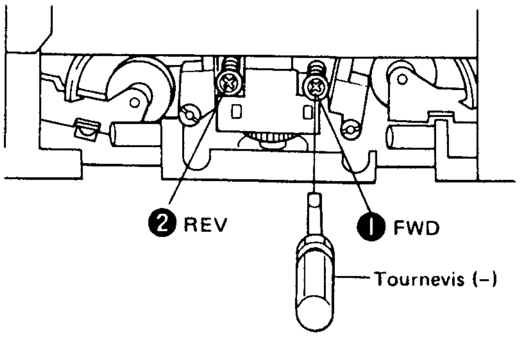

❷ REV
❶ FWD
Tournevis (-)

Fig. 12-3 Préréglage d'azimuth

12.1.3 Réglage du défilement de bande

1. Faire marcher en direction avant et insérer une cassette munie d'un mirroir, puis commuter en mode de lecture.
2. Régler l'écrou ❶ pour assurer qu'entre les guides et les têtes d'enregistrement et d'effacement, la bande ne se gondole pas. Voir Fig. 12-4.
3. Faire marcher en direction opposée.
4. Régler l'écrou ❷ pour assurer qu'entre les guides et la tête d'enregistrement et la tête factice, la bande ne se gondole pas.
5. Vérifier qu'il n'y a pas de gauchissement de la bande en répétant plusieure fois le défilement dans les deux sens.

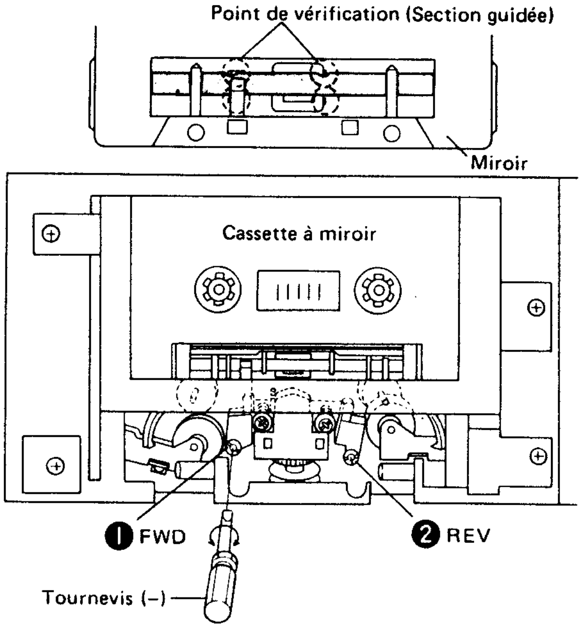
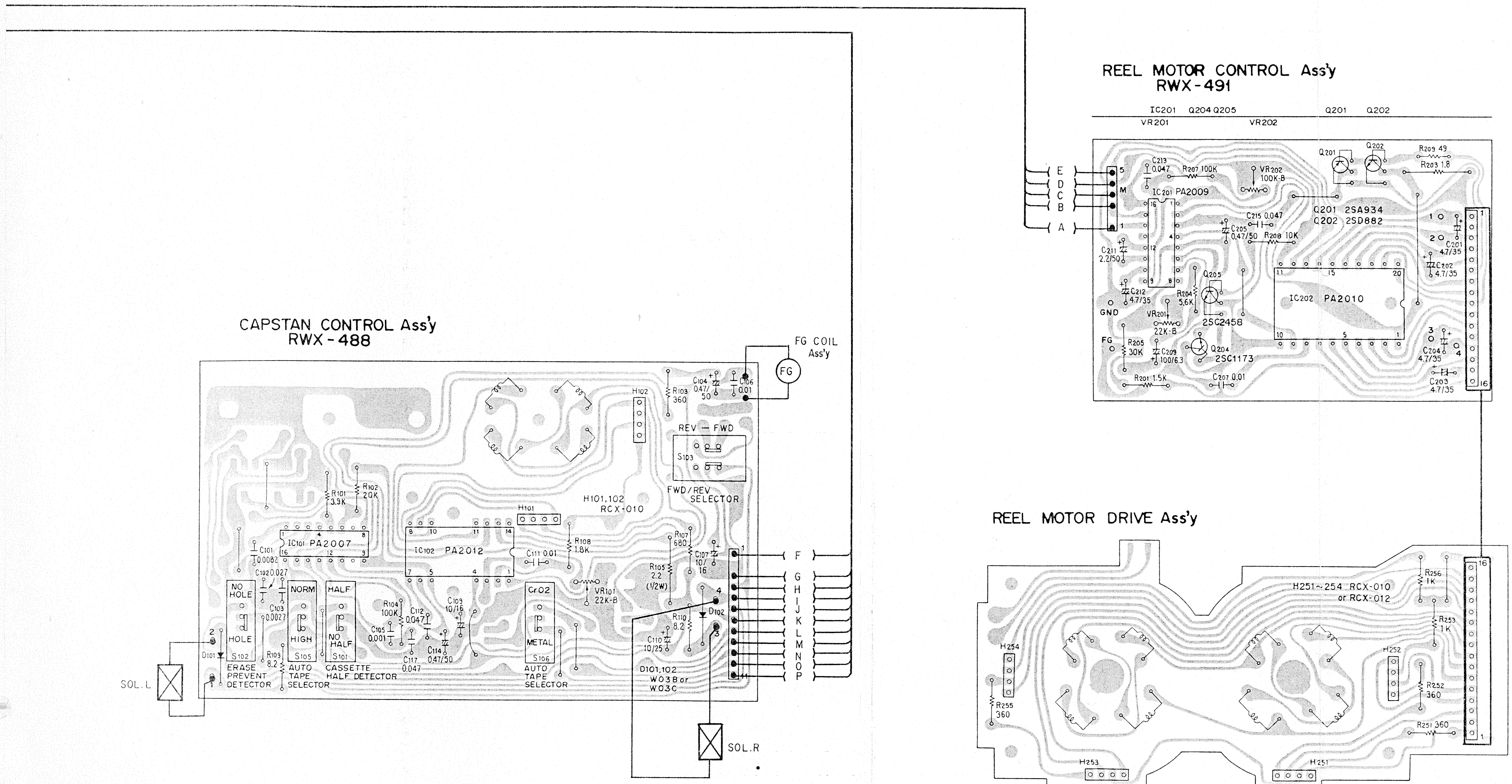

Point de vérification (Section guidée)
Miroir
Cassette à miroir
❶ FWD
❷ REV
Tournevis (-)

Fig. 12-4 Réglage du défilement de bande


REEL MOTOR CONTROL Ass'y
RWX-491
IC201 Q204 Q205 Q201 Q202
VR201 VR202
E
D
C
B
A
5
M
1
C213 0.047
R207 100K
VR202 100K-B
IC201 PA2009
Q201 2SA934
Q202 2SD882
C215 0.047
C205 0.47/50
R208 10K
R209 49
R203 1.8
C211 2.2/50
C201 4.7/35
C202 4.7/35
C212 4.7/35
R204 5.6K
Q205
2SC2458
IC202 PA2010
GND
FG
VR201 22K-B
R205 30K
C209 100/6.3
Q204 2SC1173
C204 4.7/35
C203 4.7/35
R201 1.5K
C207 0.01
16
CAPSTAN CONTROL Ass'y
RWX-488
FG COIL Ass'y
FG
H102
R103 360
C104 0.47/50
C106 0.01
REV — FWD
S103
FWD/REV SELECTOR
H101,102 RCX-010
H101
R101 3.3K
R102 20K
IC101 PA2007
IC102 PA2012
C101 0.0082
C102 0.027
C103 0.0027
C111 0.01
R108 1.8K
R107 680
C107 10/16
R105 2.2 (1/2W)
VR101 22K-B
R104 100K
C112 0.047
C109 10/16
C105 0.001
C114 0.47/50
C117 0.047
R110 8.2
D102
C110 10/25
R109 8.2
D101
NO HOLE
HOLE
S102
ERASE PREVENT DETECTOR
NORM
HIGH
S105
AUTO TAPE SELECTOR
HALF
NO HALF
S101
CASSETTE HALF DETECTOR
CrO2
METAL
S106
AUTO TAPE SELECTOR
D101,102 WO3B or WO3C
F
G
H
I
J
K
L
M
N
O
P
SOL.L
SOL.R
REEL MOTOR DRIVE Ass'y
H251~254 RCX-010 or RCX-012
R256 1K
R253 1K
H254
H252
R252 360
R255 360
R251 360
H253
H251
16
1

Mechanism viewed from the top

1. As assist gear L rotates, its cam drives the G point of the cam follower lever in an upward direction.
2. As the E point is driven upwards, point F on the right-hand side of the cam follower lever starts forcing the switching plate to the left.
3. As the switching plate is forced to the left, it carries the G point on the coupling plate to the left with it.

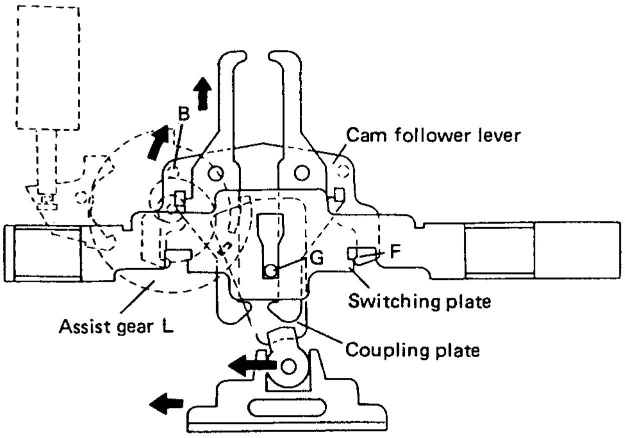

B
Cam follower lever
G
F
Switching plate
Assist gear L
Coupling plate

Fig. 1-20 DIRECTION operation 4

4. Since the H point on the coupling plate functions as a support point, as the G point is shifted to the left, the slide plate also moves to the left with the two plates above. This is shown in Fig. 1-21.

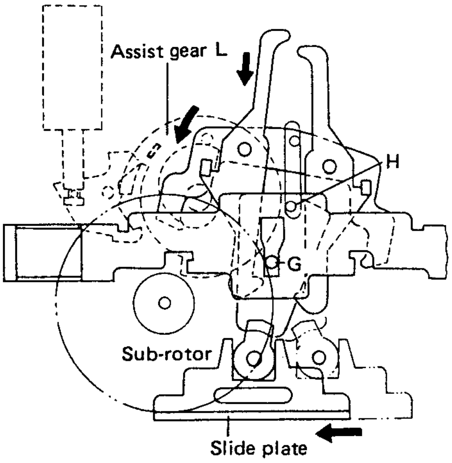

Assist gear L
H
G
Sub-rotor
Slide plate

Fig. 1-21 DIRECTION operation 5

5. As the slide plate moves from right to left, the head rotates to the REV direction attitude. (Refer to Fig. 1-23)
6. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor. Spring pressure forces it back to its original state, completing the direction operation, and switching the unit from REV to STOP.

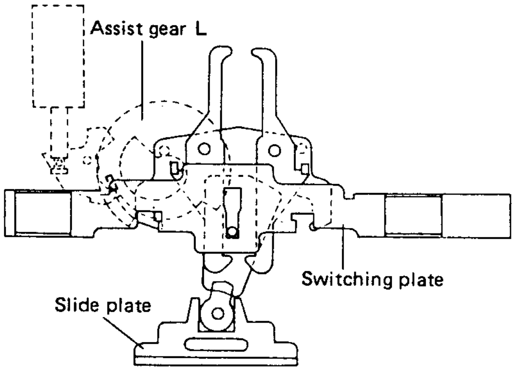

Assist gear L
Switching plate
Slide plate

Fig. 1-22 DIRECTION operation 5

4. Head Rotation

As the slide plate moves from right to left in the direction operation (described above), the pin on the sector gear also is forced from right to left. This is shown in Fig. 1-23. As the sector gear pin goes past the center point, the force of the gear spring rotates the sector gear through approximately a 90° angle. This causes the head meshed to sector gear to rotate 180°, placing the unit in a REV state.

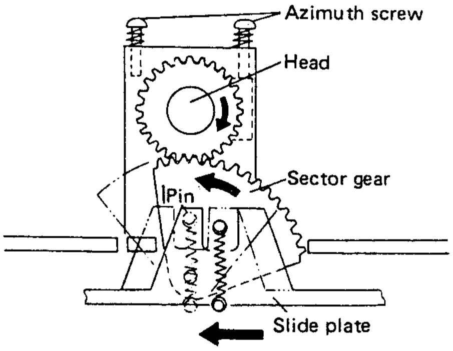

Azimuth screw
Head
Sector gear
Pin
Slide plate

Fig. 1-23 Head rotation operation 1

Direction switch ON

1. Instantaneous transit from FWD-PLAY to FWD-STOP.
2. Approx. 500msec after FWD-STOP entered, dirction operation effects REV-STOP.
3. Approx. 425msec after REV-STOP entered, REV-PAUSE entered.
4. Approx. 325msec after REV-PAUSE entered, REV-PLAY entered, thereby concluding the switching operation.

The above operational flow is also shown using interconnecting arrows in Fig. 1-3. This figure additionally shows other mechanism states possible with the various modes.

Next, the mechanism operation when switching between the various states (in the FWD direction) will be described.

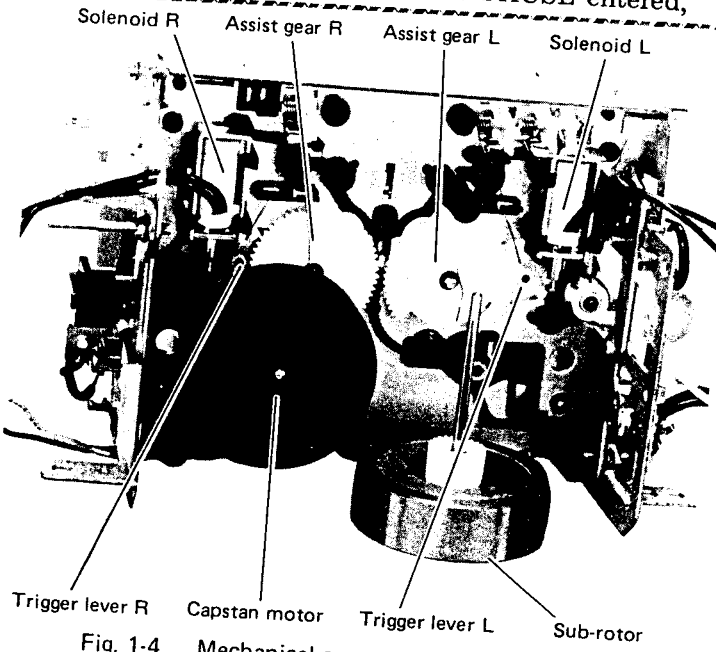

Solenoid R
Assist gear R
Assist gear L
Solenoid L
Trigger lever R
Capstan motor
Trigger lever L
Sub-rotor

Fig. 1-4 Mechanical construction (Rear view)

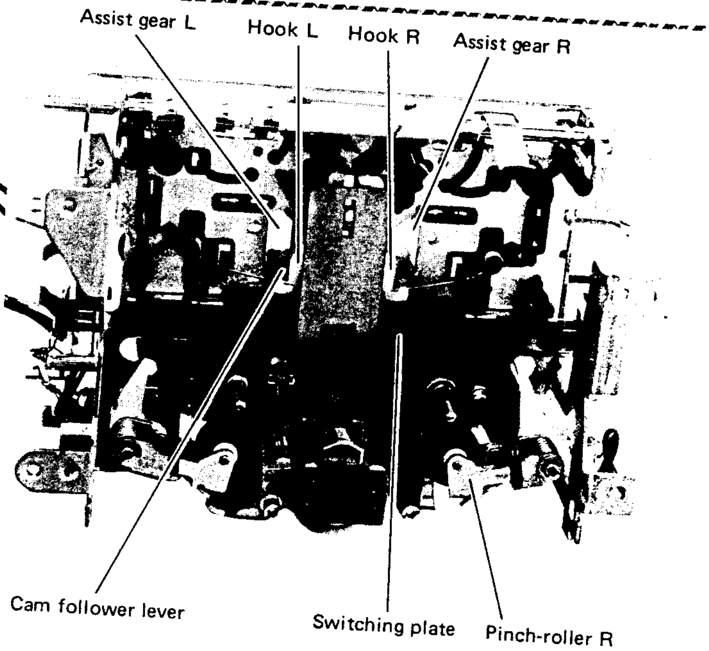

Assist gear L
Hook L
Hook R
Assist gear R
Cam follower lever
Switching plate
Pinch-roller R

Fig. 1-5 Mechanical construction (Front view)

1. Mechanism Transition from STOP to PAUSE

Mechanism viewed from underneath

1. Upon command transmission from PD6006, solenoid R turns ON (plunger retracted). (Fig. 1-6).)
2. The movement of the solenoid plunger causes the trigger lever R to disengage from the stopper, allowing the assist gear R to turn.

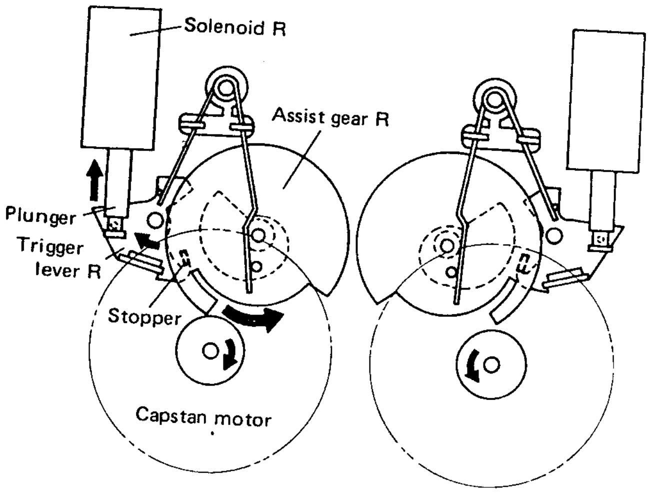

Solenoid R
Assist gear R
Plunger
Trigger lever R
Stopper
Capstan motor

Fig. 1-6 STOP-PAUSE operation 1

3. Rotation of assist gear R is meshed with the capstan motor.

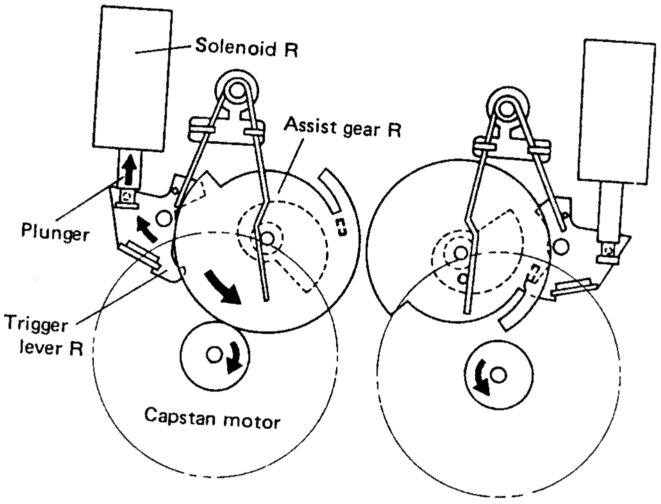

Solenoid R
Assist gear R
Plunger
Trigger lever R
Capstan motor

Fig. 1-7 STOP-PAUSE operation 2

4. After assist gear R has turned through about 3/4ths of a revolution, it disengages from the capstan motor.
5. Since solenoid R is in an ON state, the stopper on assist gear R contacts trigger lever R at point A, and stops. The above series of operations covers the events occurring on the backside of the mechanism. Next, the operations occurring simultaneous to the above, but as viewed from the top of the unit will be given.

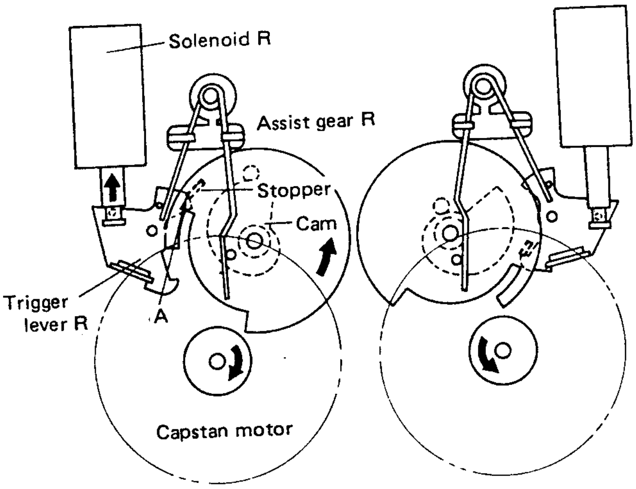

Solenoid R
Assist gear R
Stopper
Cam
Trigger lever R
A
Capstan motor

Fig. 1-8 STOP-PAUSE operation 3

Mechanism viewed from the top

1. As assist gear R rotates, its cam drives the B point of the cam follower lever in an upward direction.

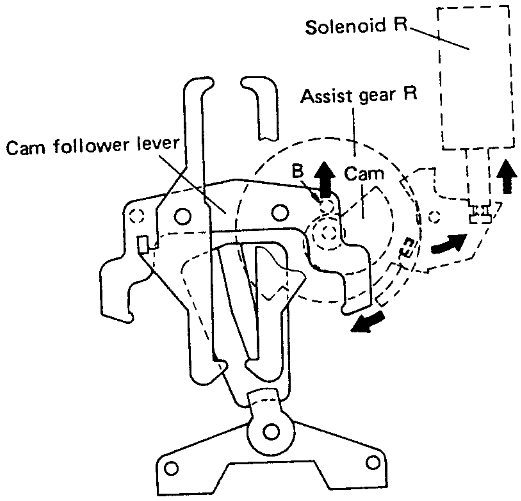

Solenoid R
Assist gear R
Cam follower lever
B
Cam

Fig. 1-9 STOP-PAUSE operation 4

2. As the B point is raised, hook R (coupled to B point) is also raised.
3. At point C, hook R catches the coupling plate and continues to rise, carrying the coupling plate and pinch-roller drive-plate with it.
4. The pinch-roller drive-plate continues to rise until the pinch-roller goes into a PAUSE status, then stops.

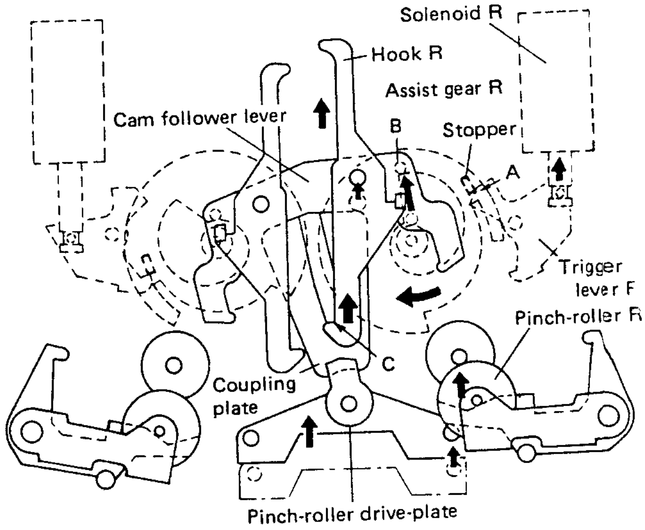

Solenoid R
Hook R
Assist gear R
Cam follower lever
B
Stopper
A
Trigger lever R
Pinch-roller R
C
Coupling plate
Pinch-roller drive-plate

Fig. 1-10 STOP-PAUSE operation 5

2. Mechanism Transition from PAUSE to PLAY

Mechanism viewed from underneath

Solenoid R is presently ON, and the mechanism is in a PAUSE state.

1. Upon command transmission from PD6006, solenoid L turns ON (plunger retracted).
2. The movement of the solenoid plunger causes the trigger lever L to disengage from the stopper, allowing assist gear L to start turning.

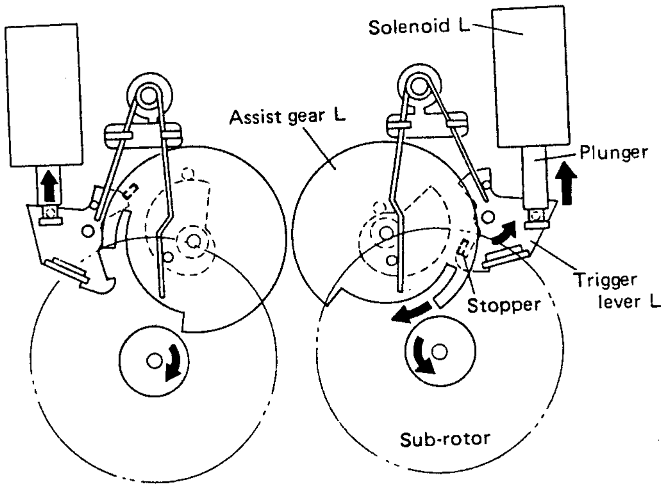

Solenoid L
Assist gear L
Plunger
Trigger lever L
Stopper
Sub-rotor

Fig. 1-11 PAUSE-PLAY operation 1

3. Rotation of assist gear L is meshed with the sub-rotor.

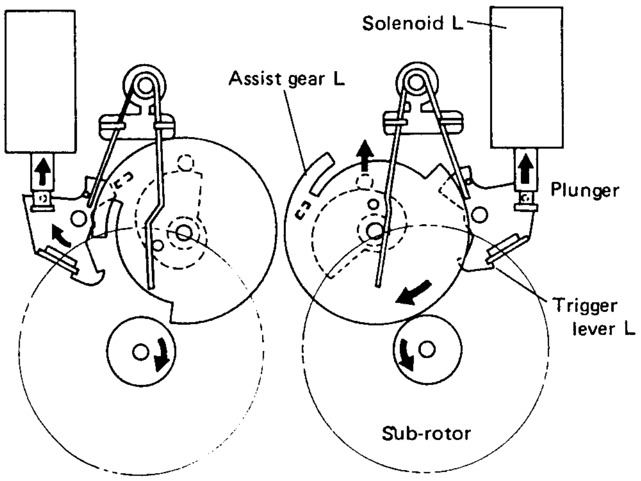

Solenoid L
Assist gear L
Plunger
Trigger lever L
Sub-rotor

Fig. 1-12 PAUSE-PLAY operation 2

4. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor.
5. Since solenoid L is in an ON state, the stopper on assist gear L contacts trigger lever L at point D, and stops.

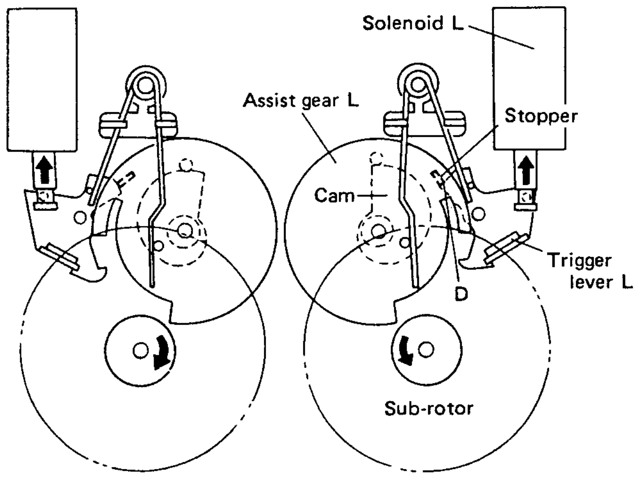

Solenoid L
Assist gear L
Stopper
Cam
Trigger lever L
D
Sub-rotor

Fig. 1-13 PAUSE-PLAY operation 3

Mechanism viewed from the top

1. As assist gear L rotates, its cam drives the E point of the cam follower lever in an upward direction.
2. As the E point is raised, hook L (coupled to E point) is also raised.

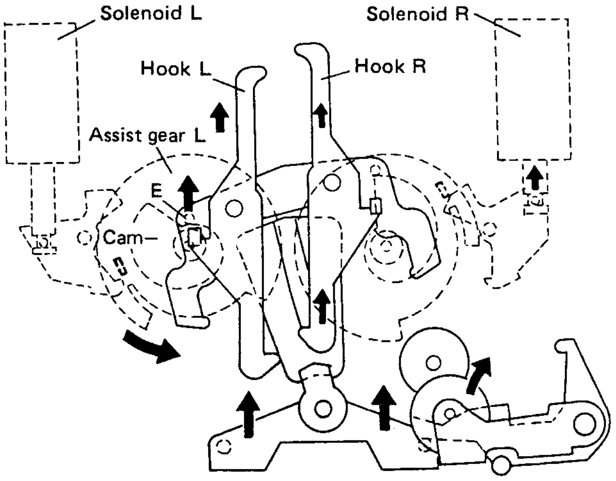

Solenoid L
Solenoid R
Hook L
Hook R
Assist gear L
E
Cam

Fig. 1-14 PAUSE-PLAY operation 4

3. When point E reaches the same height as point B, it stops. The head and pinch-roller at this point is shown in Fig. 1-15. Here, since the E point has reached the same height as the B point, the X point rises higher than that of the PAUSE status. Consequently, the head makes contact with the tape, and the tape is pinched between pinch-roller R and the capstan shaft, completing PLAY mode entry.

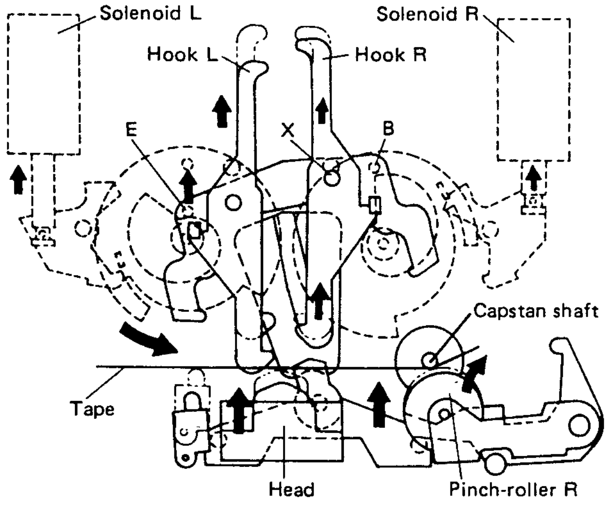

Solenoid L
Solenoid R
Hook L
Hook R
E
X
B
Capstan shaft
Tape
Head
Pinch-roller R

Fig. 1-15 PAUSE-PLAY operation 5

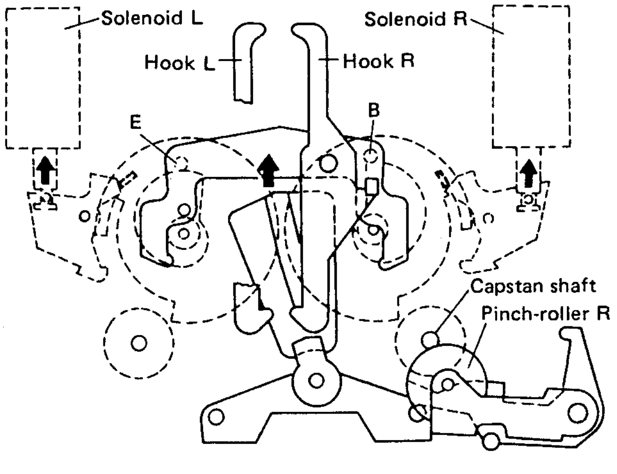

Solenoid L
Solenoid R
Hook L
Hook R
E
B
Capstan shaft
Pinch-roller R

Fig. 1-16 PAUSE-PLAY operation 6

3. Direction Operation

Mechanism viewed from underneath

Mechanism is presently in STOP status

1. Upon command transmission from PD6006, solenoid L turns ON (plunger retracted).
2. The movement of the solenoid plunger causes the trigger lever L to disengage from the stopper, allowing assist gear L to start turning.

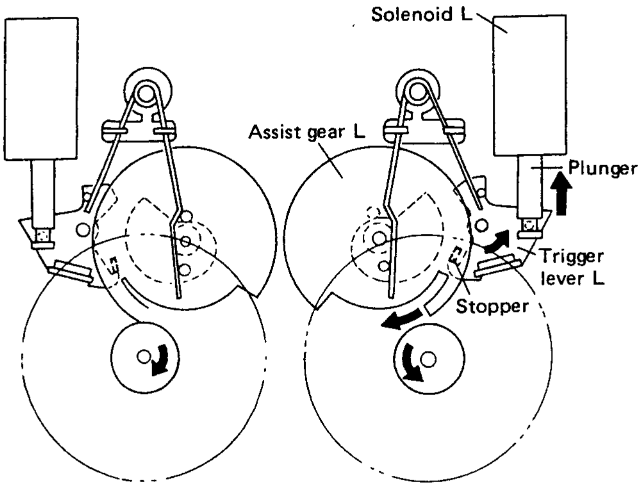

Solenoid L
Assist gear L
Plunger
Trigger
lever L
Stopper

Fig. 1-17 DIRECTION operation 1

3. Solenoid L then goes OFF, returning trigger lever L to it's original position.
4. Rotation of assist gear L is meshed with the sub-rotor.

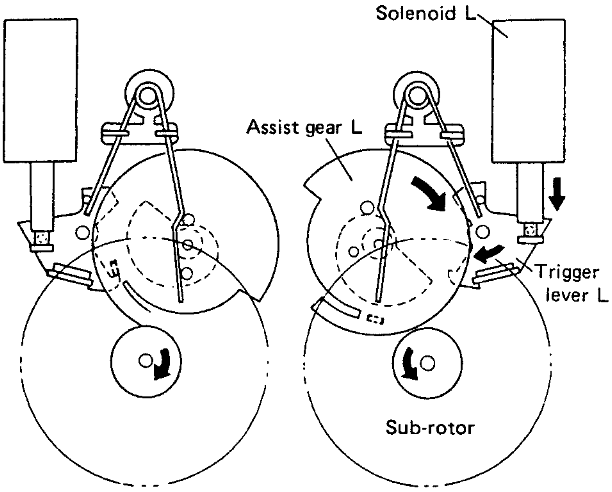

Solenoid L
Assist gear L
Trigger
lever L
Sub-rotor

Fig. 1-18 DIRECTION operation 2

5. After assist gear L has turned through about 3/4ths of a revolution, it disengages from the sub-rotor.
6. When the sub-rotor and assist gear L become unmeshed, since the solenoid lever has already returned to its out position, spring tension is allowed to return the assist gear to its original position after making only one revolution. This completes the operation.

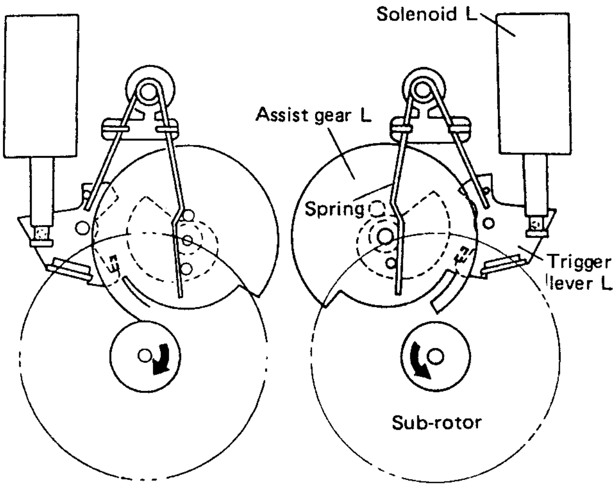

Solenoid L
Assist gear L
Spring
Trigger
lever L
Sub-rotor

Fig. 1-19 DIRECTION operation 3

ADDITIONAL

Service Manual

PIONEER®

ORDER NO.
ARP-220-0

STEREO CASSETTE TAPE DECK

CT-7R
CT-6R

- **In CT-7R, a one-chip IC (PA3012) is incorporated in the Dolby NR circuit with the following Serial No.**
  For mechanical adjustments, please see the service manuals ART-667-0 and ARP-095.
- **Ce manuel d'instruction se refère au mode de réglage, en fançais.**
- **Este manual de servicio trata del método de ajuste escrito en español.**

Type	Serial No.
KU	3635101 ~
KC	3401101 ~
HE	8405701 ~
HB	8500501 ~
HP	8600201 ~
D	9303301 ~
D/G	9304201 ~

- **In CT-6R, a one-chip IC (PA3012) is incorporated in the Dolby NR circuit with the following Serial No.**
  For mechanical adjustments, please see the service manuals ART-671-0 and ARP-094.
- **Ce manuel d'instruction se refère au mode de réglage, en fançais.**
- **Este manual de servicio trata del método de ajuste escrito en español.**

Type	Serial No.
KU	3655401 ~
KC	3402601 ~
HE	8411501 ~
HB	8501801 ~
HP	8600401 ~
D	9303201 ~
D/G	9302501 ~

H1 012 b

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

YF © JULY. 1982 Printed in Japan

ELECTRICAL ADJUSTMENTS

Precaution

1. Mechanical adjustment should be completed.
2. Clean the following parts with an alcohol moistened swab; Record/Playback head, Pinch roller, Erase head, Rubber belts and Capstan.
3. Demagnetize record/playback head with a head demagnetizer.
4. Do not use magnetized screwdriver for adjustments.
5. Adjustment and measurements should be performed for both L-ch and R-ch with rated power supply voltage.
6. Adjustments should be performed in the order given in this service manual. Altering the order can hinder proper adjustments, resulting in loss of performance.
7. Level during measurements are based on 0dBv=1V. Connect a 50kΩ dummy resistor across the OUTPUT terminals.
8. Let the unit warm up (aging) for a few minutes before proceeding with the adjustment.
9. Set the DOLBY NR switch OFF unless directed otherwise.

Test Equipment/Tools Required;

1. Test tape

STD-331A	for general playback purpose
STD-341A	for playback adjustment
STD-608A	NORMAL blank tape
STD-603	CrO$_2$ blank tape
STD-604	METAL blank tape

2. Audio oscillator
3. AC millivoltmeter (AC mV)
4. Attenuator
5. Oscilloscope
6. Resistor 50kΩ (1/4W)

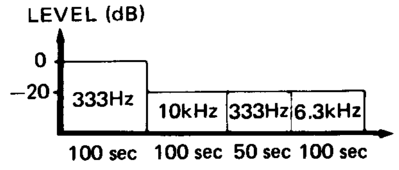


Fig. 1 Contents of the test tape STD-341A

HEAD AZIMUTH ADJUSTMENT

Setting:

Mode	Playback (FWD and REV)
Test tape	STD-341A, 10kHz portion
AC mV meter	OUTPUT terminals
VR501, VR502	Max.

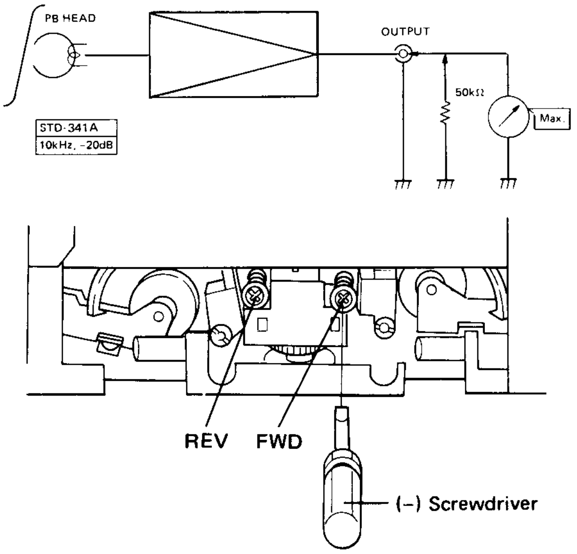


Fig. 2 Azimuth preadjustment

Procedure:

Play a tape in both forward and reverse directions. Adjust the head azimuth screw to the position of maximum output level.

TAPE TRANSPORT ADJUSTMENT

1. Load a mirror-equipped cassette half.
2. Set the DIRECTION switch to FORWARD and then the mode to PLAY.
3. Adjust the adjust nut ❶ so that no curling takes place on REC/PB head guide and erase head guide as shown in Fig. 3.
4. Set the DIRECTION switch to REVERSE.
5. Adjust the adjust nut ❷ so that no curling occurs on REC/PB head guide and erase head guide.
6. Play a tape in both FORWARD and REVERSE directions and check that no curling on tape is found.

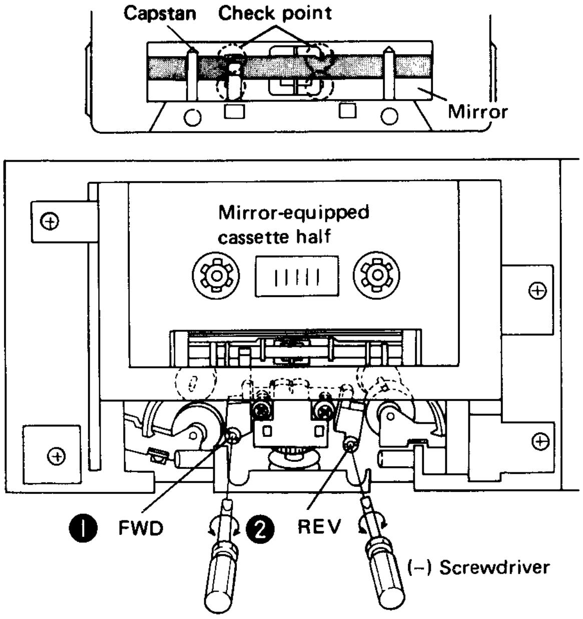

Capstan
Check point
Mirror
Mirror-equipped cassette half
❶ FWD
❷ REV
(–) Screwdriver

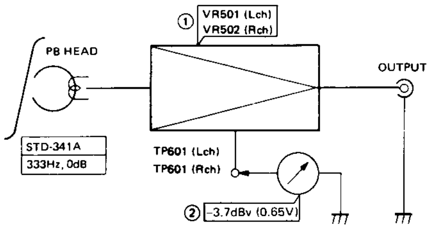
Fig. 3 Tape transport adjustment

PLAYBACK LEVEL ADJUSTMENT

Since this adjustment determines the DOLBY NR level during playback, it should be performed precisely.

Setting:

Mode	Playback (FWD)
Test tape	STD-341A, 333Hz 0dB portion
AC mV meter	TP601 of the DOLBY NR assembly L TP601 of the DOLBY NR assembly R


① VR501 (Lch)
VR502 (Rch)
PB HEAD
OUTPUT
STD-341A
333Hz, 0dB
TP601 (Lch)
TP601 (Rch)
② –3.7dBv (0.65V)

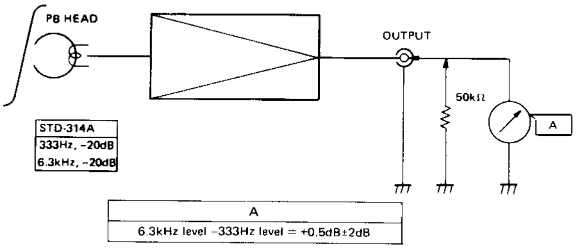
Procedure:

Adjust the VR501 (Lch) and VR502 (Rch) of the AMP assembly so that the AC mV meter reads -3.7dBv (0.65V).

PLAYBACK EQUALIZER CHECK

Setting:

Mode	Playback (FWD and REV)
Test tape	STD-341A, 333Hz and 6.3kHz portions
AC mV meter	OUTPUT terminals


PB HEAD
OUTPUT
50kΩ
A
STD-314A
333Hz, –20dB
6.3kHz, –20dB
A
6.3kHz level –333Hz level = +0.5dB±2dB

Procedure:

Play the 333Hz and 6.3kHz portions of the test tape. Check that the difference between the two output levels does not exceed +0.5dB±2dB.

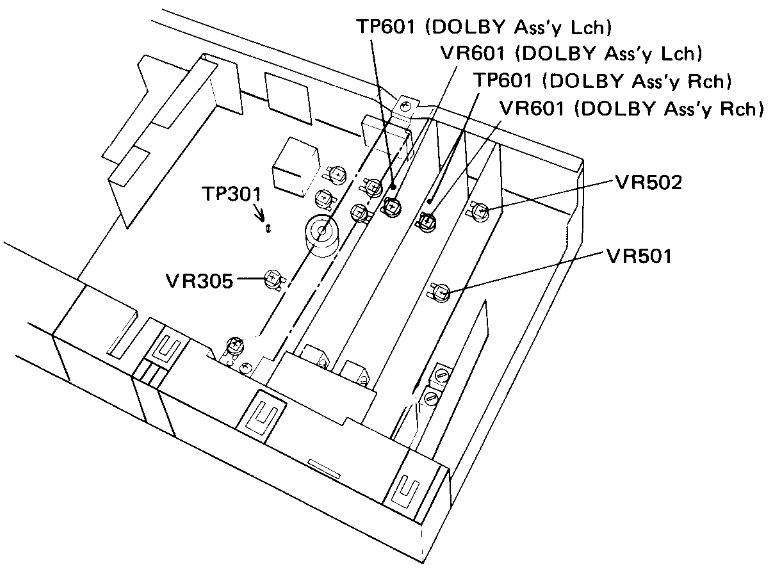

TP601 (DOLBY Ass'y Lch)
VR601 (DOLBY Ass'y Lch)
TP601 (DOLBY Ass'y Rch)
VR601 (DOLBY Ass'y Rch)
VR502
VR501
TP301
VR305

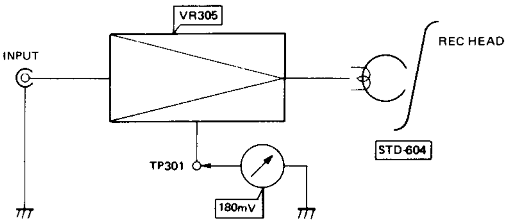
Fig. 4 Adjustment points

ERASURE CURRENT ADJUSTMENT

The adjustment procedure is the same for both the FWD and REV directions, but if there is a difference between the two indications, adjust so that the lower of the two erasure current indications is 180mV $^{+0}_{-40}$*mV.*

Setting:

Mode .... Record
INPUT Level Control ... Min.
AC mV meter .... TP301 of the Mother assembly
Test tape STD-604


VR305
INPUT
REC HEAD
TP301
180mV
STD-604

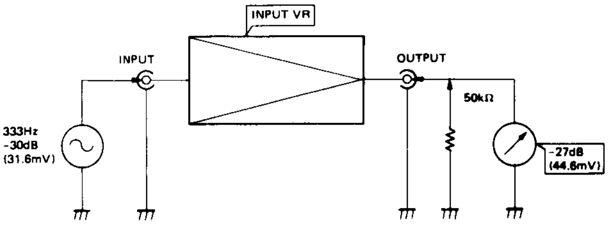
Procedure:

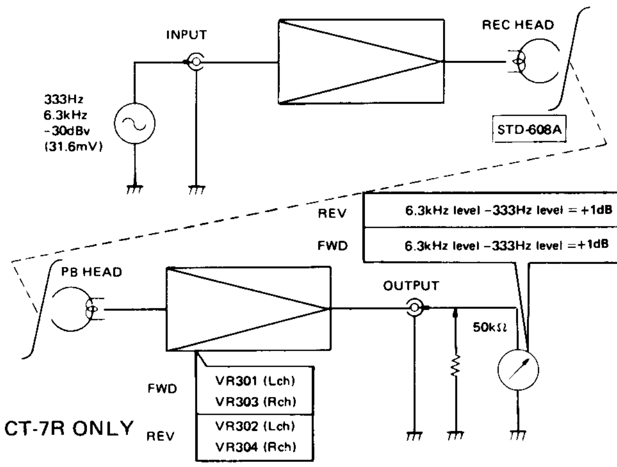
1. Set the unit to the FWD position and adjust the VR305 so that the AC mV meter reads 180mV.
2. Likewise, set the CT-7R to the REV position and confirm that AC mV meter reads 180mV $^{+0}_{-40}$ mV. CT-7R ONLY

RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

Setting:

Mode .... Record
Record/Playback
Input Signal .... 333Hz, - 30dBv
(from INPUT) (31.6mV)
6.3kHz, - 30dBv
(31.6mV)
Test tape STD-608A
AC mV meter .... OUTPUT terminals


INPUT VR
INPUT
OUTPUT
333Hz
-30dB
(31.6mV)
50kΩ
-27dB
(44.6mV)


INPUT
REC HEAD
333Hz
6.3kHz
-30dBv
(31.6mV)
STD-608A
REV
6.3kHz level -333Hz level = +1dB
FWD
6.3kHz level -333Hz level =+1dB
PB HEAD
OUTPUT
50kΩ
FWD
VR301 (Lch)
VR303 (Rch)
CT-7R ONLY
REV
VR302 (Lch)
VR304 (Rch)

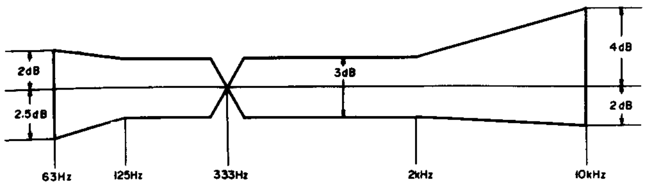
Procedure:

1. Adjust the INPUT level control so that the AC mV meter reads - 27dBv (44.6mV).
2. Set the unit to the FWD position and record and play back the input signals (333Hz and 6.3kHz) onto the STD-608A. Adjust the VR301 (Lch) and VR303 (Rch) so that the difference between two is +1dB.
3. Likewise, set the CT-7R to the REV position and record and play back the input signals (333Hz and 6.3kHz) onto the STD-608A. Then adjust the VR302 (Lch) and VR304 (Rch) so that the difference two outputs is +1dB. CT-7R ONLY

* As listed in the specifications in Fig. 5, check to see that performance meets specifications.

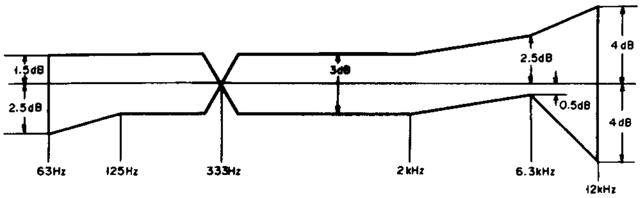
Frequency Response

Using STD-341A with DOLBY NR OFF
However, the right channel is compensated by —1dB at 63Hz, and —0.5dB at 125Hz because of the insulation effect.

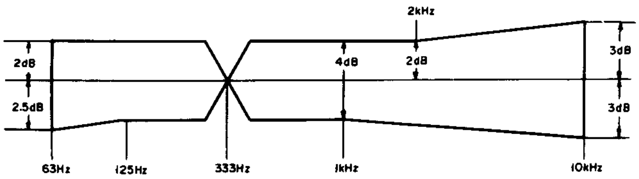


Overall Frequency Response

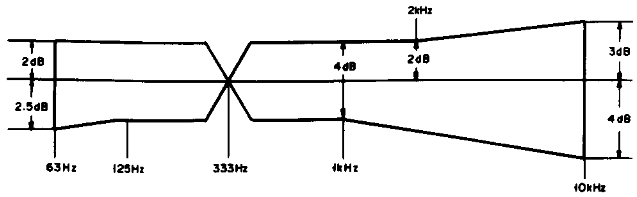
Using STD-608A with DOLBY NR OFF



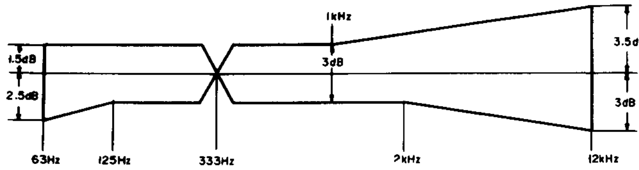
Using STD-608A with DOLBY NR ON (B type)



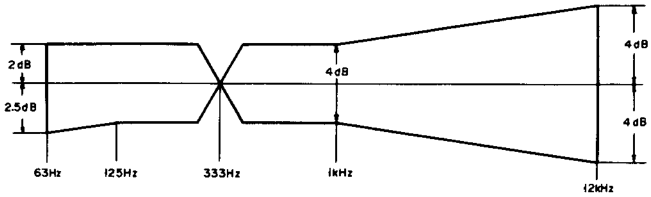
Using STD-608A with DOLBY NR ON (C type)



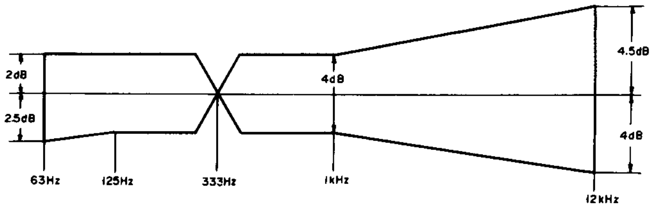
Using STD-603with DOLBY NR OFF



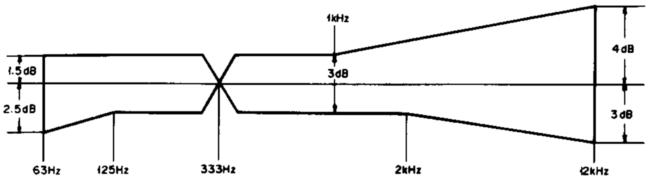
Using STD-603 with DOLBY NR ON (B type)



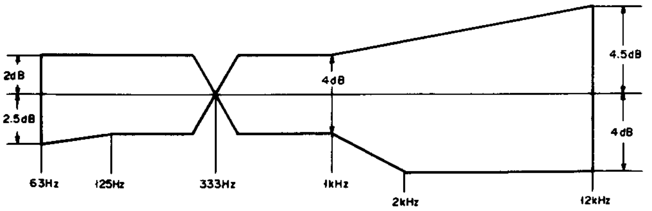
Using STD-603 with DOLBY NR ON (C type)



Using STD-604 with DOLBY NR OFF



Using STD-604 with DOLBY NR ON (B type)



Using STD-604 with DOLBY NR ON (C type)

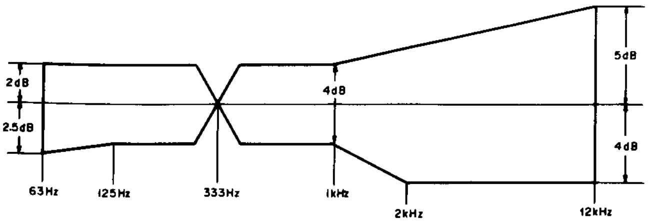
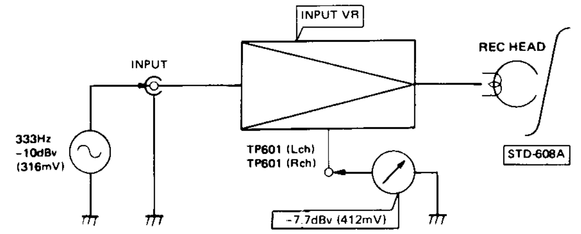


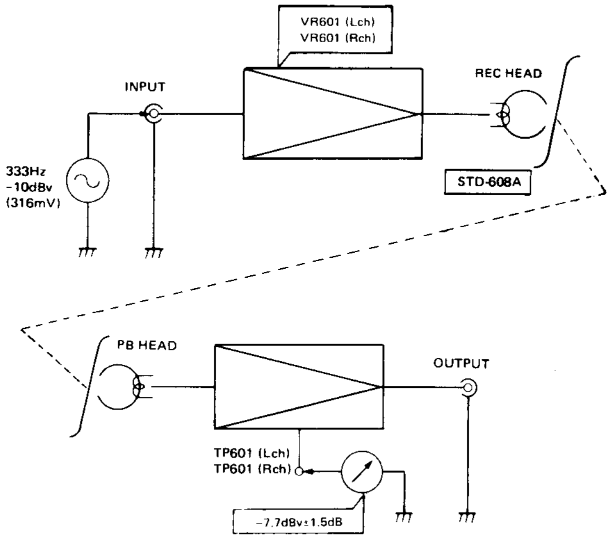
Fig. 5 Frequency response

RECORDING LEVEL ADJUSTMENT

Setting:

Mode	Record Record/Playback
Input Signal (from INPUT)	333Hz, - 10dBv (316mV)
Test tape	STD-608A (NORM) STD-603 (CrO2) STD-604 (METAL)
AC mV meter	TP601 of the DOLBY NR assembly L TP601 of the DOLBY NR assembly R


INPUT VR
REC HEAD
INPUT
333Hz
-10dBv
(316mV)
TP601 (Lch)
TP601 (Rch)
STD-608A
-7.7dBv (412mV)


VR601 (Lch)
VR601 (Rch)
REC HEAD
INPUT
333Hz
-10dBv
(316mV)
STD-608A
PB HEAD
OUTPUT
TP601 (Lch)
TP601 (Rch)
-7.7dBv±1.5dB

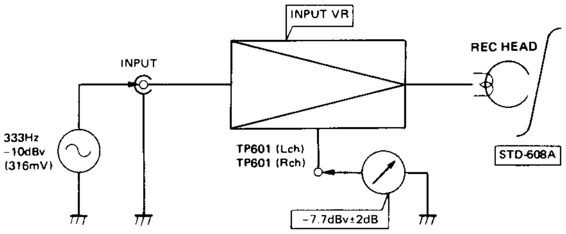
Procedure:

1. Set the test tape STD-608A and adjust the INPUT level control so that the AC mV meter reads - 7.7dBv (0.41V).
2. Set the DOLBY NR switch to ON position. Set the unit to the FWD position and record and play back the input signal onto the STD-608A. Adjust the VR601 (Lch) and VR601 (Rch) so that the AC mV meter reads - 7.7dBv (0.41V).
3. Set the test tape STD-603 and DOLBY NR switch to the ON position and record and play back the input signal onto the STD-603. Confirm that the AC mV meter reads - 7.7dBv ±1.5dB.
4. Set the test tape STD-604 and DOLBY NR switch to the ON position and record and play back the input signal onto the STD-604. Confirm that the AC mV meter reads - 7.7dBv ±1.5dB.

LEVEL METER CHECK

Setting:

MODE	Record pause
Input signal (from INPUT)	333Hz, - 10dBv (316mV)
AC mV meter	TP601 of the DOLBY NR assembly L TP601 of the DOLBY NR assembly R


INPUT VR
REC HEAD
INPUT
333Hz
-10dBv
(316mV)
TP601 (Lch)
TP601 (Rch)
STD-608A
-7.7dBv±2dB

Procedure:

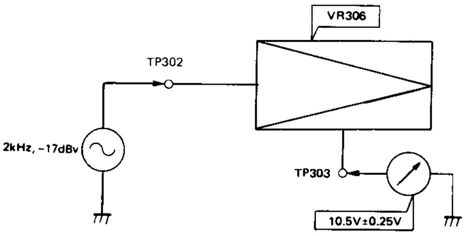
Adjust the INPUT level control so that the level meter reads 0 VU. Then check the AC mV meter reads - 7.7dBv±2dB.

LEADER TAPE DETECT ADJUSTMENT (CT-7R ONLY)

Step 1.

Setting:

Mode	Stop
Input Signal	2kHz, - 17dBv (0.4V P-P Sin wave) to TP302 of the Mother assembly
DC mV meter	TP303 of the Mother assembly


VR306
TP302
2kHz, -17dBv
TP303
10.5V±0.25V

Procedure:

1. Remove the connector CN315 of the Mother assembly.
2. Adjust the VR306 so that the DC mV meter reads 10.5V±0.25V.
3. Return the connector CN315 to the original position.

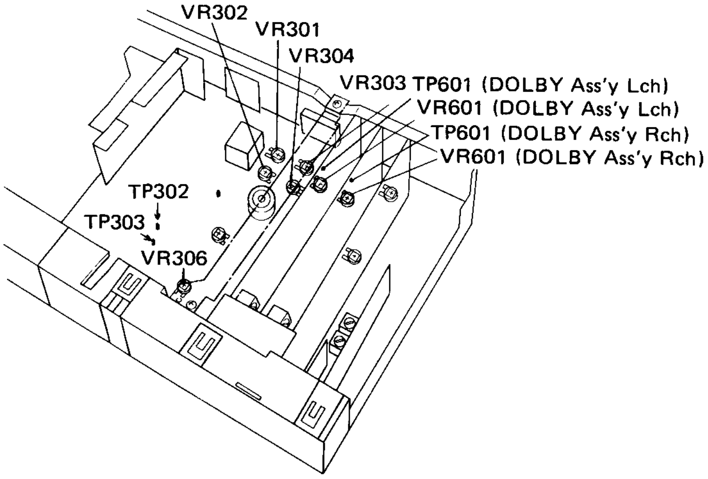
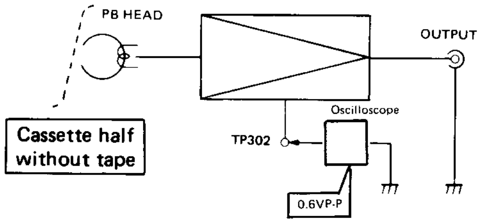

VR302
VR301
VR304
VR303
TP601 (DOLBY Ass'y Lch)
VR601 (DOLBY Ass'y Lch)
TP601 (DOLBY Ass'y Rch)
VR601 (DOLBY Ass'y Rch)
TP302
TP303
VR306

Fig. 6 Adjustment points

Step 2.

Setting:

Mode	Playback
Tape	Cassette half without tape
Oscilloscope	TP302 of the Mother assembly


PB HEAD
OUTPUT
Oscilloscope
Cassette half without tape
TP302
0.6VP-P

Procedure:

1. Confirm that the Oscilloscope reads - 10dBv (0.6V P-P square wave).
2. If - 10dBv is exceeded, bridge the section shown in Fig. 7 by soldering.

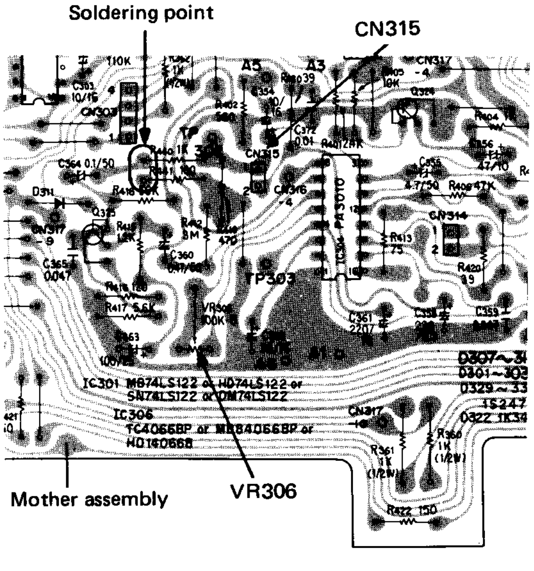

Soldering point
CN315
TP303
IC301
IC306
Mother assembly
VR306

Fig. 7 Soldering point

RÉGLAGES ÉLECTRIQUES

Précautions

1. Les réglages mécaniques doivent être terminés.
2. Nettoyer les pièces suivantes à l'aide d'un bâtonnet imbibé d'alcool: tête d'enregistrement/lecture, galet presseur, tête d'effacement, courroies en caoutchouc et cabestan.
3. Démagnétiser la tête d'enregistrement/lecture à l'aide d'un démagnétiseur de tête.
4. Ne pas utiliser de tournevis magnétisé pour les réglages.
5. Les réglages et les mesures doivent être réalisés pour les canaux de gauche et de droite avec la tension d'alimentation nominale.
6. Les réglages doivent être effectués dans l'ordre indiqué dans ce manuel de service. Une modification de cet ordre peut empêcher la réalisation de réglages corrects et peut provoquer une baisse de performance.
7. Les niveaux en cours de mesure sont basés sur 0dBv = 1V. Raccorder une charge fictive de 50 kΩ entre les bornes de sortie (OUTPUT).
8. Laisser chauffer (vieillissement) le unité pendant quelques minutes avant de procéder aux réglages.
9. Placer le commutateur DOLBY NR sur OFF sauf indication contraire.

Equipements/outils d'essai requis

1. Bande d'essai

STD-331A	Pour la reproduction générale.
STD-341A	Pour le réglage de la reproduction
STD-608A	Bande "NORMAL" vierge
STD-603	Bande "CrO2" vierge
STD-604	Bande "METAL" vierge

2. Oscillateur BF
3. Millivoltmètre alternatif (mV CA)
4. Atténuateur
5. Oscilloscope
6. Résistance 50 kΩ (1/4W)

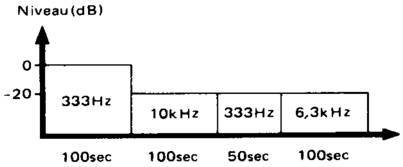


Fig. 1 Contenu de la bande d'essai STD-341A

RÉGLAGE DE L'AZIMUT DE TÊTE

Montage:

Mode	Lecture (FWD et REV)
Bande d'essai	STD-341A, partie de 10kHz
Millivoltmètre alternatif	Bornes de sortie OUTPUT
VR501, VR502	Maximum

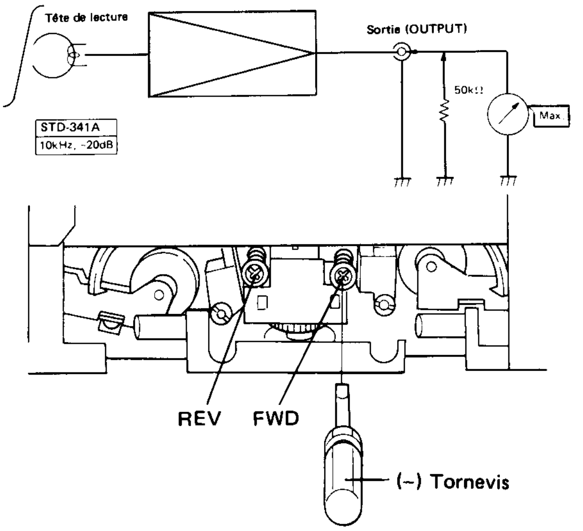


Fig. 2 Préréglage d'azimut

Procédure:

Lire la bande en sens avant et en sens arrière. Régler la vis d'azimut de tête sur la position donnant le niveau de sortie maximum.

RÉGLAGE DE L'ENTRAINEMENT DE LA BANDE

1. Charger une demi-cassette munie d'un miroir.
2. Placer le commutateur de DIRECTION sur la position FORWARD (avant) et le mode sur PLAY (lecture).
3. Régler l'écrou de réglage ❶ de manière à ce qu'aucune ondulation ne se produise sur la pièce de guidage de la tête d'enregistrement/lecture (REC/PB) ni sur le guide de la tête d'effacement, comme indiqué à la Fig. 3.
4. Placer le commutateur de DIRECTION sur la position REVERSE (arrière).
5. Régler l'écrou de réglage ❷ de manière à ce qu'aucune ondulation ne se produise sur le guide de la tête d'enregistrement/lecture (REC/PB) ni sur le guide de la tête d'effacement.
6. Faire défiler une bande en avant (FORWARD) et en arrière (REVERSE) et vérifier qu'aucune ondulation ne se produit.

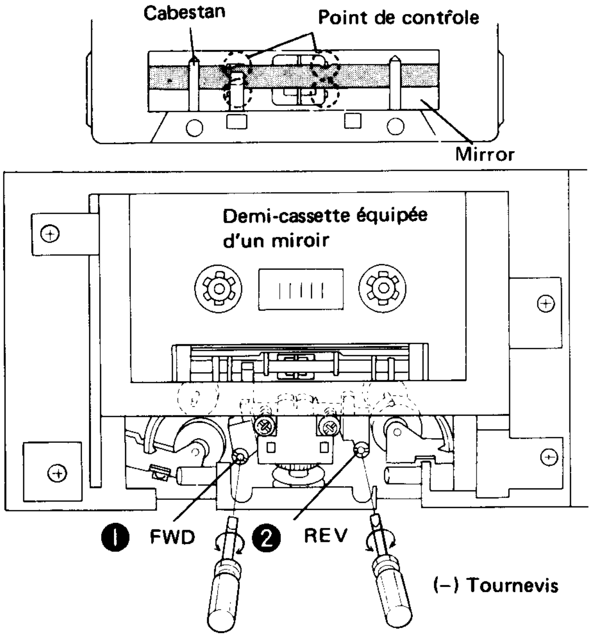

Cabestan
Point de contrôle
Mirror
Demi-cassette équipée d'un miroir
❶ FWD
❷ REV
(–) Tournevis

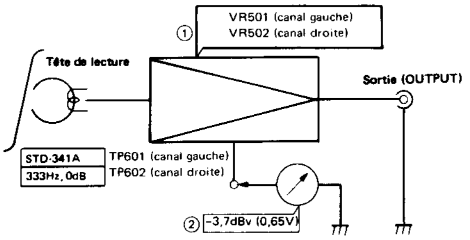
Fig. 3 Réglage de l'entraînement de la bande

RÉGLAGE DU NIVEAU DE LECTURE

Ce réglage doit être effectué avec précision car il détermine le niveau Dolby NR pendant la lecture.

Montage:

Mode	Lecture (avant (FWD))
Bande d'essai	STD-341A, partie de 333Hz, 0dB
Millivoltmètre alternatif	TP601 de l'ensemble Dolby NR de gauche (L) TP601 de l'ensemble Dolby NR de droite (R)


① VR501 (canal gauche)
VR502 (canal droite)
Tête de lecture
Sortie (OUTPUT)
STD-341A
333Hz, 0dB
TP601 (canal gauche)
TP602 (canal droite)
② -3,7dBv (0,65V)

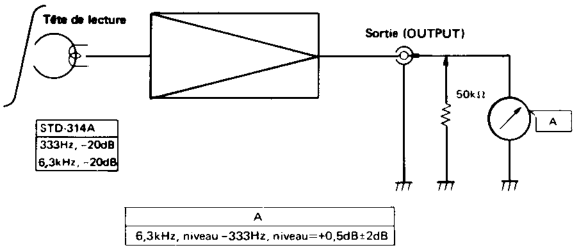
Procédure:

Régler VR501 (canal de gauche) et VR502 (canal de droite) de l'ensemble AMP, de mianière à ce que le millivoltmètre alternatif indique - 3,7dBv (0,65V).

CONTRÔLE DE L'EGALISEUR DE LECTURE

Montage:

Mode	Lecture (avant (FWD) et arrière (REV))
Bande d'essai	STD-341A, parties de 333Hz et de 6,3kHz
Millivoltmètre alternatif	Bornes de sortie (OUTPUT)


Tête de lecture
Sortie (OUTPUT)
50kΩ
A
STD-314A
333Hz, -20dB
6,3kHz, -20dB
A
6,3kHz, niveau -333Hz, niveau=+0,5dB±2dB

Procédure:

Lire les parties 333Hz et 6,3kHz de la bande d'essai. Vérifier que la différence entre les deux niveaux de sortie ne dépasse pas +0,5dB ±2dB.

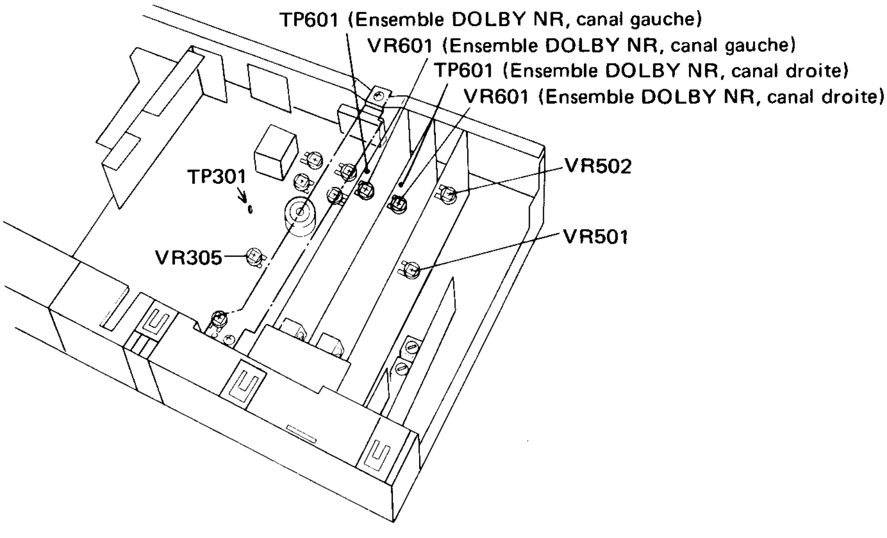
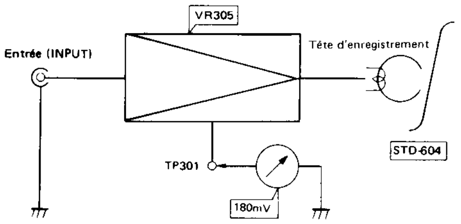

TP601 (Ensemble DOLBY NR, canal gauche)
VR601 (Ensemble DOLBY NR, canal gauche)
TP601 (Ensemble DOLBY NR, canal droite)
VR601 (Ensemble DOLBY NR, canal droite)
TP301
VR305
VR502
VR501

Fig. 4 Points de réglage

RÉGLAGE DU COURANT D'EFFACEMENT

La procédure de réglage est la même dans les deux directions, avant (FWD) et arrière (REV), mais les deux valeurs indiquées sont différentes. Le réglage doit être effectué de manière à ce que le plus faible des deux courants d'effacement soit de 180mV$^{+0}_{-40}$ mV.


VR305
Entrée (INPUT)
Tête d'enregistrement
STD-604
TP301
180mV

Montage:

Mode	Enregistrement
Réglage du niveau d'entrée (INPUT)	Minimum
Millivoltmètre alternatif	TP301 de l'ensemble principal
Bande d'essai	STD-604

Procédure:

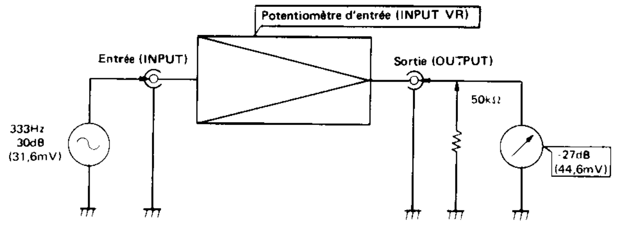
1. Régler le unité sur la position de défilement avant (FWD) et régler VR305 de manière à ce que le millivoltmètre alternatif indique 180mV.
2. De la même manière, régler le CT-7R sur la position de défilement arrière (REV) et vérifier que le millivoltmètre alternatif indique 180mV $^{+0}_{-40}$ mV.

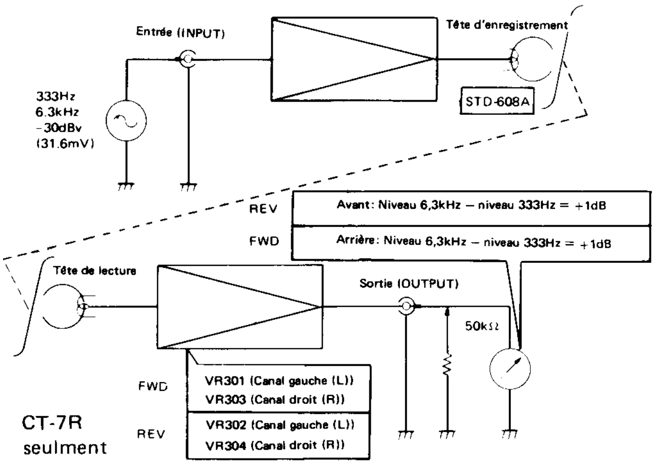
CT-7R seulment

RÉGLAGE DE LA REPONSE EN FREQUENCE D'ENREGISTREMENT/LECTURE

Montage:

Mode	Enregistrement Enregistrement/lecture
Signal d'entree (à INPUT)	333Hz, - 30dBv (31,6mV) 6,3kHz, 30dBv (31,6mV)
Bande d'essai	STD-608A
Millivoltmètre alternatif	Bornes de sortie (OUTPUT)


Potentiomètre d'entrée (INPUT VR)
Entrée (INPUT)
Sortie (OUTPUT)
333Hz
30dB
(31,6mV)
50kΩ
-27dB
(44,6mV)


Entrée (INPUT)
Tête d'enregistrement
333Hz
6.3kHz
-30dBv
(31.6mV)
STD-608A
REV
FWD
Avant: Niveau 6,3kHz – niveau 333Hz = +1dB
Arrière: Niveau 6,3kHz – niveau 333Hz = +1dB
Tête de lecture
Sortie (OUTPUT)
50kΩ
FWD
VR301 (Canal gauche (L))
VR303 (Canal droit (R))
REV
VR302 (Canal gauche (L))
VR304 (Canal droit (R))
CT-7R
seulment

Procédure:

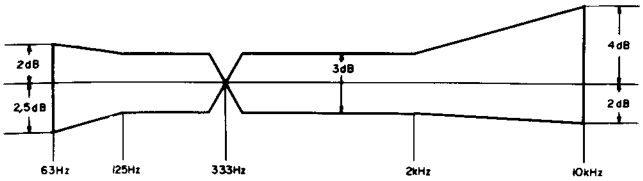
1. Régler le niveau d'entrée (INPUT) de manière à ce que le millivoltmètre alternatif indique - 27dBv (44,6mV).
2. Placer le unite en position de défilement avant (FWD) puis enregistrer et lire les signaux d'entrée (333Hz et, 6,3kHz) sur STD-608A. Régler VR301 (canal de gauche (L)) et VR303 (canal de droite (R)), de manière à ce que la différence entre les deux soit de +1dB.
3. De la même manière, placer le CT-7R en position de défilement arrière (REV) puis enregistrer les signaux d'entrée (333Hz et 6,3kHz) sur STD-608A. Régler VR-302 (canal de gauche et VR304 (canal de droite), de manière à ce que la différence entre les deux sorties soit de +1dB.

CT-7R seulment

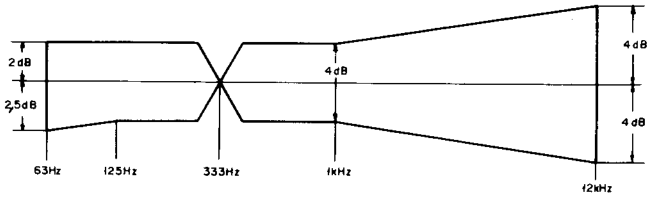
* Comme indiqué dans les spécifications de la Fig. 5, vérifier que les performances correspondent aux spécifications.

Réponse en fréquence

Utilisation de STD-341A, avec Dolby NR DECLENCHE
A cause de l'effet d'isolement, le canal de droite est compensé de -1dB à 63Hz et de -0,5dB à 125Hz.

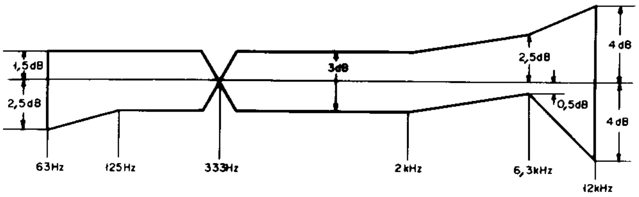


Utilisation de STD-603, avec Dolby NR ENCLENCHE (type B)

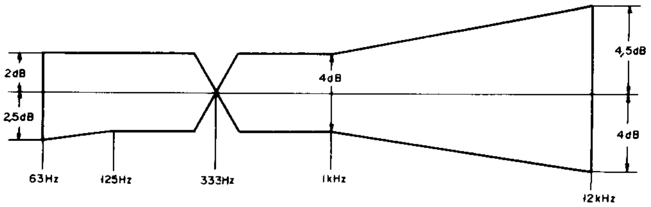


Réponse en fréquence globale

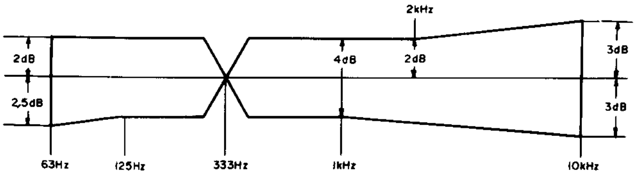
Utilisation de STD-608A, avec Dolby NR DECLENCHE



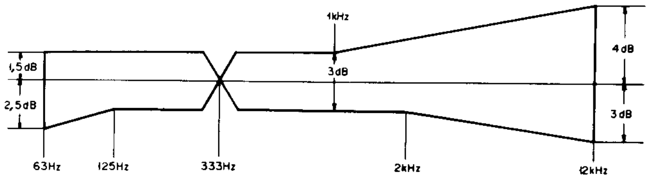
Utilisation de STD-603, avec Dolby NR ENCLENCHE (type C)



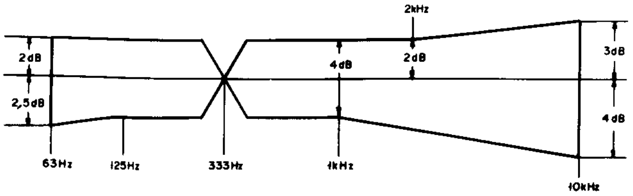
Utilisation de STD-608A, avec Dolby NR ENCLENCHE (type B)



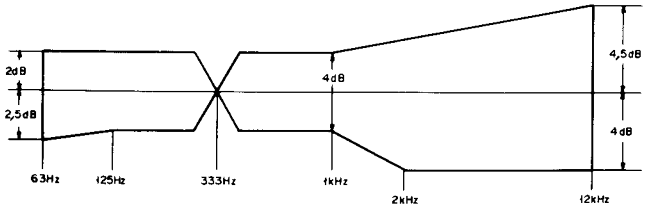
Utilisation de STD-604, avec Dolby NR DECLENCHE



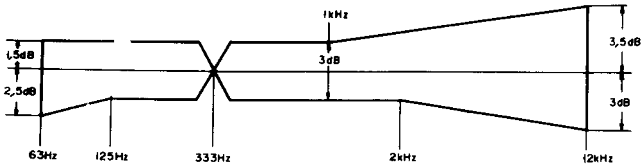
Utilisation de STD-608A, avec Dolby NR ENCLENCHE (type C)



Utilisation de STD-604, avec Dolby NR ENCLENCHE (type B)



Utilisation de STD-603, avec Dolby NR DECLENCHE



Utilisation de STD-604, avec Dolby NR ENCLENCHE (type C)

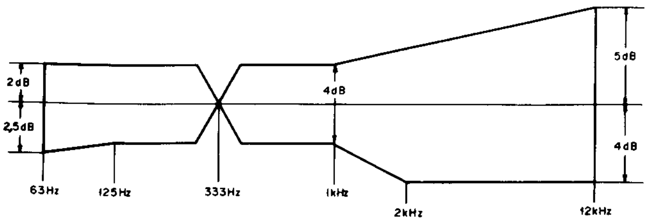
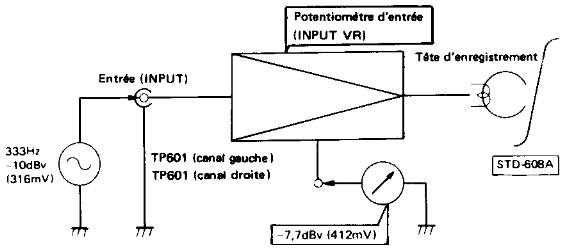


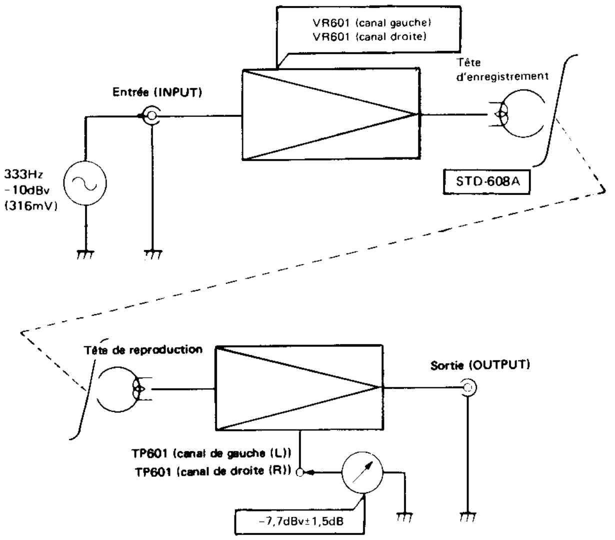
Fig. 5 Réponse en frequence

RÉGLAGE DU NIVEAU D'ENREGISTREMENT

Montage:

Mode	Enregistrement Enregistrement/lecture
Signal d'entrée (à INPUT)	333Hz, - 10dBv (316mV)
Bande d'essai	STD-608A (NORM) STD-603 (CrO₂) STD-604 (METAL)
Millivoltmètre alternatif	TP601 de l'ensemble Dolby NR de gauche TP601 de l'ensemble Dolby NR de droite


Potentiomètre d'entrée (INPUT VR)
Tête d'enregistrement
Entrée (INPUT)
333Hz
-10dBv
(316mV)
TP601 (canal gauche)
TP601 (canal droite)
STD-608A
-7,7dBv (412mV)


VR601 (canal gauche)
VR601 (canal droite)
Tête d'enregistrement
Entrée (INPUT)
333Hz
-10dBv
(316mV)
STD-608A
Tête de reproduction
Sortie (OUTPUT)
TP601 (canal de gauche (L))
TP601 (canal de droite (R))
-7,7dBv±1,5dB

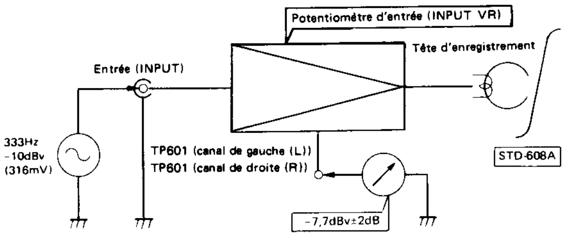
Procédure:

1. Installer la bande d'essai STD-608A et régler le niveau d'entrée (INPUT) de manière à ce que le millivoltmètre alternatif indique - 7,7dBv (0,41V).
2. Placer le commutateur Dolby NR sur la position ON (enclenché). Placer le unité en position de défilement avant (FWD) puis enregistrer et lire le signal d'entrée sur STD-608A. Régler VR601 (canal de gauche) et VR601 (canal de droite) de manière à ce que le millivoltmètre alternatif indique - 7,7dBv (0,41V).
3. Installer la bande d'essai STD-603 et placer le commutateur Dolby NR sur la position ON (enclenché), puis enregistrer et lire le signal d'entrée sur STD-603. Vérifier que le millivoltmètre alternatif indique - 7,7dBv ±1,5dB.
4. Installer la bande d'essai STD-604 et placer le commutateur Dolby NR sur la position ON (enclenché), puis enregistrer et lire le signal d'entrée sur STD-604. Vérifier que le millivoltmètre alternatif indique - 7,7dB ±1,5dB.

CONTRÔLE DE L'INDICATEUR DE NIVEAU

Montage:

Mode	Enregistrement/pause
Signal d'entrée (à INPUT)	333Hz, 10dBv (316mV)
Millivoltmètre alternatif	TP601 de l'ensemble Dolby NR de gauche TP601 de l'ensemble Dolby NR de droite


Potentiomètre d'entrée (INPUT VR)
Tête d'enregistrement
Entrée (INPUT)
333Hz
-10dBv
(316mV)
TP601 (canal de gauche (L))
TP601 (canal de droite (R))
STD-608A
-7,7dBv±2dB

Procédure:

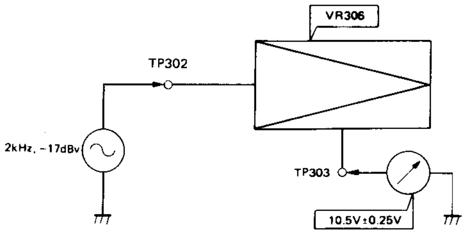
Régler le niveau d'entrée (INPUT) de manière à ce que l'indicateur de niveau affiche 0 VU. Contrôler alors que le millivoltmètre alternatif indique - 7,7dBv±2dB.

RÉGLAGE DE LA DETECTION D'AMORCE (CT-7R seul)

Etape 1.

Montage:

Mode .... Arrêt (STOP)
Signal d'entrée .... 2kHz, -17dBv (onde sinusoïdale de 0,4Vc-c) à TP302 de l'ensemble principal
Millivoltmètre continu .... TP303 de l'ensemble principal


VR306
TP302
2kHz, -17dBv
TP303
10.5V±0.25V

Procédure:

1. Retirer le connecteur CN315 de l'ensemble principal.
2. Régler VR306 de manière à ce que le millivoltmètre continu indique 10,5V ±0,25V.
3. Remettre le connecteur CN315 à sa position originale.

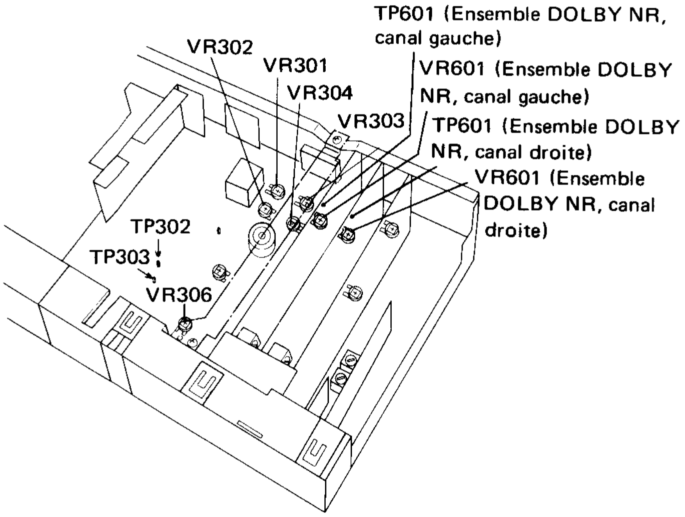
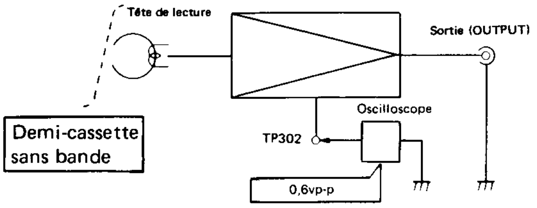

TP601 (Ensemble DOLBY NR, canal gauche)
VR302
VR301
VR304
VR601 (Ensemble DOLBY NR, canal gauche)
VR303
TP601 (Ensemble DOLBY NR, canal droite)
VR601 (Ensemble DOLBY NR, canal droite)
TP302
TP303
VR306

Fig. 6 Points de réglage

Etape 2.

Montage:

Mode .... Lecture
Bande .... Demi-cassette sans bande
Oscilloscope .... TP302 de l'ensemble principal


Tête de lecture
Sortie (OUTPUT)
Demi-cassette sans bande
Oscilloscope
TP302
0,6vp-p

Procédure:

1. Vérifier que le oscilloscope indique -10dBv (onde carrée de 0,6Vc-c).
2. Si la valeur -10dBv est dépassée, ponter par soudure la partie indiquée à la Fig. 7.

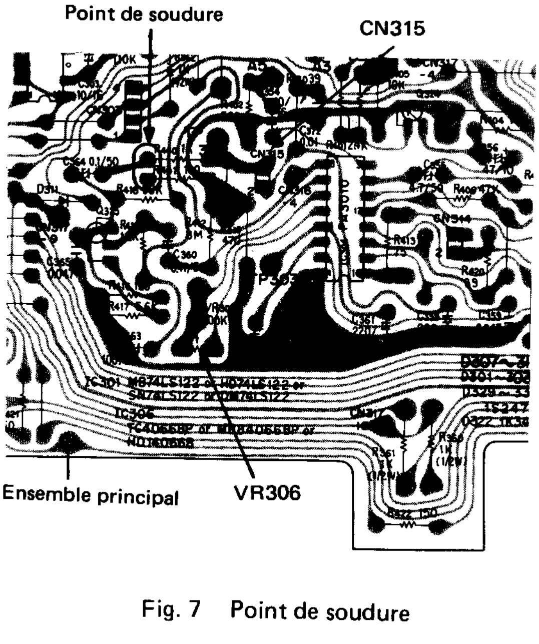

Point de soudure
CN315
Ensemble principal
VR306

Fig. 7 Point de soudure

AJUSTES ELÉCTRICOS

Precauciones

1. Deberán completarse los ajustes mecánicos.
2. Limpiar las partes siguientes con algodón humedecido en alcohol: cabeza de grabación/reprodución, rodillo de arrastre, cabeza de borrado, correas de goma y eje de arrastre.
3. Desmagnetizar la cabeza de grabación/reproducción con un desmagnetizador de cabezas.
4. No utilizar destornilladores magnetizados para los ajustes.
5. Los ajustes y las mediciones deberán realizarse para la tensión nominal de suministro de los canales izquierdo y derecho.
6. Los ajustes deberán realizarse en el orden dado en este manual de servicio. Si se altera el orden los ajustes pueden resultar inútiles, dando como resultado una pérdida de rendimiento.
7. El nivel durante las mediciones se basa en 0dBv = 1V. Conectar un resistor fíctico de 50Kohmios a los terminales de salida (OUTPUT).
8. Dejar que el unidad se precaliente durante algunos minutos antes de proceder con el ajuste.
9. Poner el interruptor de reducción de ruido Dolby (DOLBY NR) en la posición OFF a menos de que se diga otra cosa.

Equipos/herramientas de pruebas requeridos:

1. Cinta de prueba

STD-331A	Para el propósito de reporoducción general.
STD-341A	para el ajuste de reproducción
STD-608A	cinta NORMAL en blanco
STD-603	cinta CrO2 en blanco
STD-604	cinta de METAL en blanco

2. Oscilador sonoro
3. Milivoltímetro de CA (AC mV)
4. Atenuador
5. Osciloscopio
6. Resistor de 50Kohmios (1/4W)

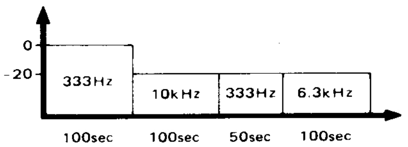


Fig. 1 Contenido de la cinta de prueba STD-341A

AJUSTE DEL AZIMUT DE LA CABEZA

Ajuste:

Modo	Reproducción (FWD y REV)
Cinta de prueba	STD-341A, parte de 10kHz
Voltímetro de CA .... (escala de mV)	Terminales OUTPUT
VR501, VR502	Máx.

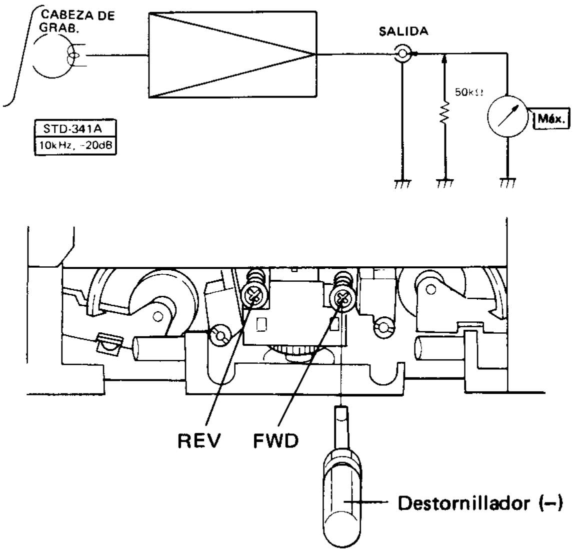


Fig. 2 Preajuste del azimut

Procedimiento:

Poner una cinta en reproducción en ambas direcciones, de ida y retorno. Ajustar el tornillo del azimut de la cabeza hasta la posición que ofrezca el mayor nivel de salida.

AJUSTE DEL TRANSPORTE DE LA CINTA

1. Insertar un casete provisto de espejo.
2. Poner el selector DIRECTION en la posición FORWARD y el de modo en PLAY.
3. Ajustar la tuerca de ajuste ❶ de modo que no oscile la quía de la cabeza REC/PB ni la quía de la cabeza de borrado como muestra la figura 3.
4. Poner el selector DIRECTION en la posición REVERSE.
5. Ajustar la tuerca de ajuste ❷ de modo que no oscile la quía de la cabeza REC/PB ni la quía de la cabeza de borrado
6. Poner la cinta en reproducción en ambas direcciones, de ida y retorno, y comprobar que no ocurra oscilación en la cinta.

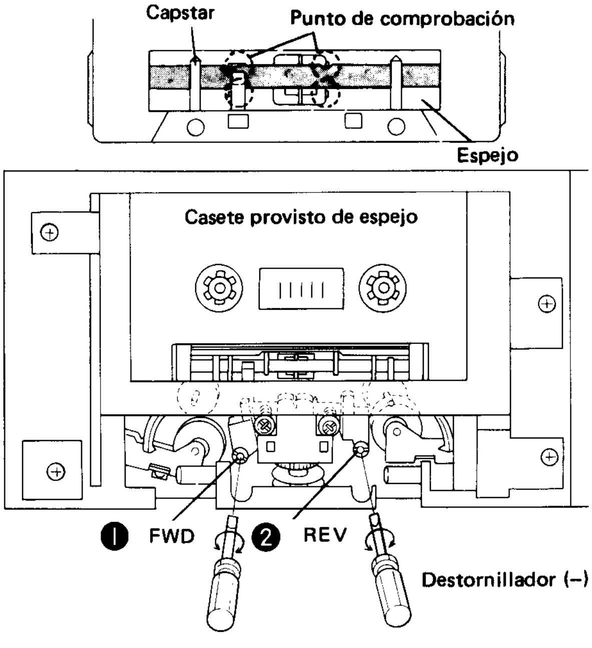

Capstar
Punto de comprobación
Espejo
Casete provisto de espejo
❶ FWD
❷ REV
Destornillador (–)

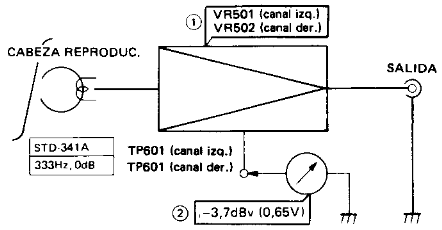
Fig. 3 Ajuste del transporte de la cinta

AJUSTE DEL NIVEL DE REPRODUCCION

Puesto que este ajuste determina el nivel de reducción de ruido DOLBY de grabación, deberá realizarse de modo prociso.

Ajuste:

Modo	Reproducción (FWD)
Cinta de prueba	STD-341A, posición 333Hz, 0dB
Voltímetro de CA .... (escala de mV)	TP601 del conjunto L de DOLBY NR TP601 del conjunto R de DOLBY NR


① VR501 (canal izq.)
VR502 (canal der.)
CABEZA REPRODUC.
SALIDA
STD-341A
333Hz, 0dB
TP601 (canal izq.)
TP601 (canal der.)
② –3,7dBv (0,65V)

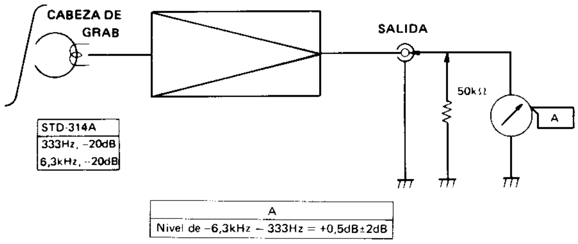
Procedimiento:

Ajustar el VR501 (canal izq.) y el VR502 (canal der.) del conjunto del AMP de modo que el voltímetro de CA indique –3,7dBv (0,65V).

COMPROBACIÓN DEL ECUALIZADOR DE REPRODUCCIÓN

Ajuste:

Modo	Reproducción (FWD y REV)
Cinta de prueba	STD-341A, posiciónes 333Hz y 6,3kHz
Voltímetro de CA .... (escala de mV)	Terminales OUTPUT


CABEZA DE GRAB
SALIDA
50kΩ
A
STD-314A
333Hz, –20dB
6,3kHz, –20dB
A
Nivel de –6,3kHz – 333Hz = +0,5dB±2dB

Procedimiento:

Poner en reproducción la cinta de prueba en las posiciones de 333Hz y 6,3kHz. Comprobar que la diferencia entre los dos niveles de salida no soprepase +0,5dB ± 2dB.

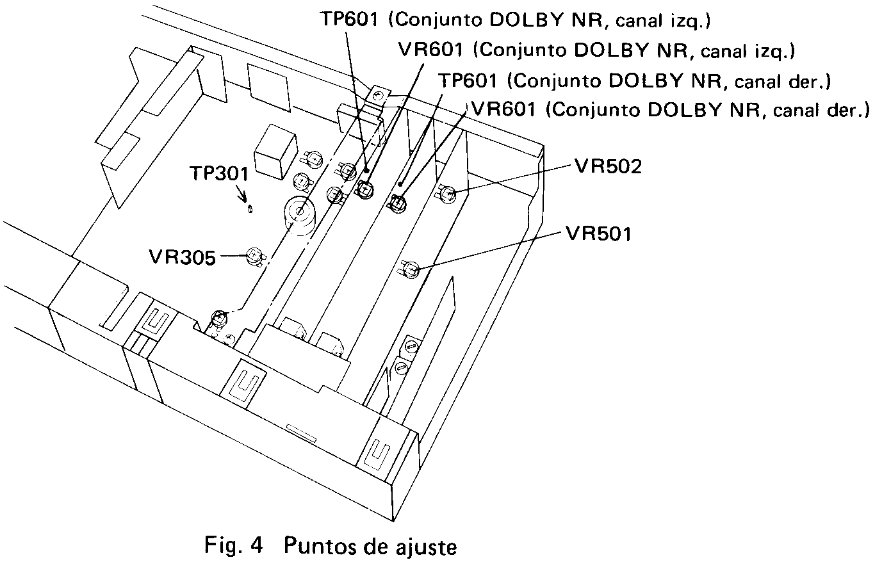

TP601 (Conjunto DOLBY NR, canal izq.)
VR601 (Conjunto DOLBY NR, canal izq.)
TP601 (Conjunto DOLBY NR, canal der.)
VR601 (Conjunto DOLBY NR, canal der.)
VR502
TP301
VR501
VR305

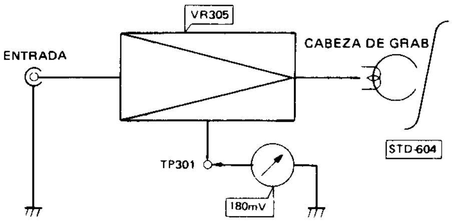
Fig. 4 Puntos de ajuste

AJUSTE DE LA CORRIENTE DE BORRADO

El procedimiento de ajuste es el mismo para ambas direcciones, FWD y REV, pero si existe alguna diferencia entre las dos indicaciones, ajustar de modo que la inferior de ellas sea 180 mV $^{+0}_{-40}$ mV.

Ajuste:

Modo	Grabación
Control del nivel ...... de entrada	Min.
Voltímetro de CA .... (escala de mV)	TP301 del conjunto principal
Cinta de prueba	STD-604


VR305
ENTRADA
CABEZA DE GRAB
STD-604
TP301
180mV

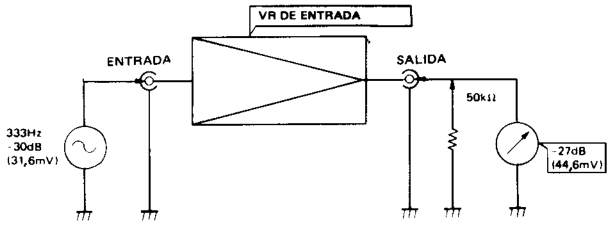
Procedimiento:

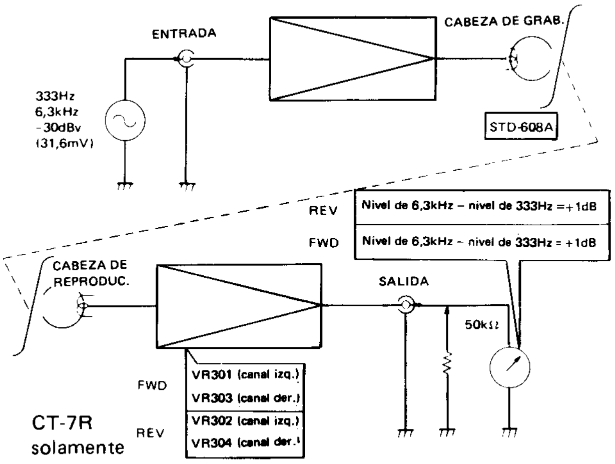
1. Ajustar el unidad en la posición FWD y el VR-305 de modo que el voltímetro de CA indique 180 mV.
2. De igual forma, ajustar el CT-7R en la posición REV y confirmar que el voltímetro de CA indique 180 mV ± $^{0}_{4,0}$ mV. CT-7R solamente

AJUSTE DE LA RESPUESTA EN FRECUENCIA DE GRABACIÓN/REPRODUCCIÓN

Ajuste:

Modo	Grabación Grabación/reproducción
Señal de entrada ...... (desde INPUT)	333Hz, - 30dBv (31,6 mV) 6,3kHz, -30dBv (31,6 mV)
Cinta de prueba	STD-608A
Voltímetro de CA .... (escala mV)	Terminales OUTPUT


VR DE ENTRADA
ENTRADA
SALIDA
50kΩ
333Hz
-30dB
(31,6mV)
-27dB
(44,6mV)


ENTRADA
CABEZA DE GRAB.
333Hz
6,3kHz
-30dBv
(31,6mV)
STD-608A
REV
Nivel de 6,3kHz – nivel de 333Hz =+1dB
FWD
Nivel de 6,3kHz – nivel de 333Hz = +1dB
CABEZA DE REPRODUC.
SALIDA
50kΩ
FWD
VR301 (canal izq.)
VR303 (canal der.)
REV
VR302 (canal izq.)
VR304 (canal der.)
CT-7R solamente

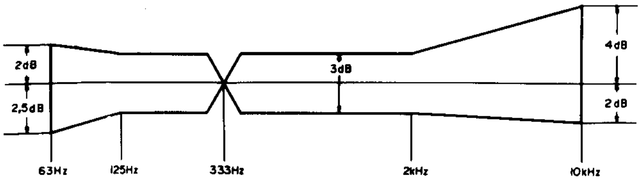
Procedimiento:

1. Ajustar el control de nivel de entrada de modo que el voltímetro de CA indique - 27dBv (44,6 mV).
2. Ajustar el unidad en la posición FWD y grabar y reproducir señales de entrada (333Hz y 6,3kHz) en la STD-608A. Ajustar el VR301 (canal izq.) y el VR303 (canal der.) de modo que la diferencia entre ambos sea de +1dB.
3. De igual forma ajustar et CT-7R en la posición REV y grabar y reproducir señales de entrada (333Hz y 6,3kHz) en la STD-608A. Después, ajustar el VR302 (canal izq.) y el VR304 (canal der.) de modo que la diferencia entre las dos salidas sea de +1dB. CT-7R solamente

* Como indica en las especificaciones de la figura 5, comprobar que el rendimiento satisfaga dichas especificaciones.

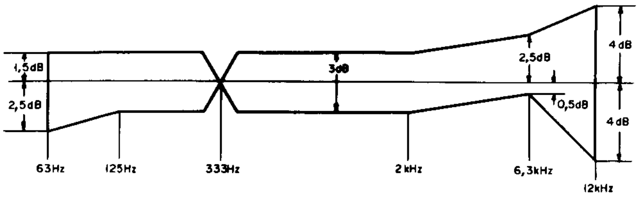
Respuesta en frecuencia

Utilizando la STD-341A con el interruptor DOLBY NR en la posición OFF
El canal izquierdo se compensa en −1dB a 63Hz y a −0,5 a 125Hz debido al efecto de aislamiento.

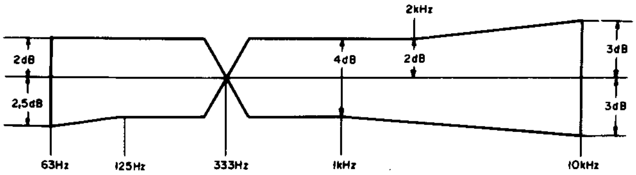


Repuesta global en frecuencia

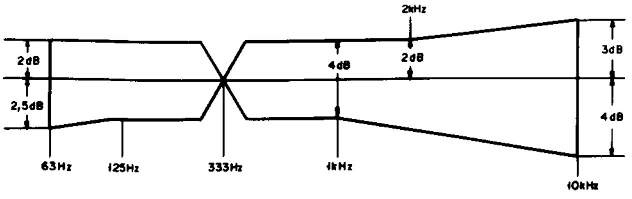
Utilizando la STD-608A con el interruptor DOLBY NR en la posición OFF.



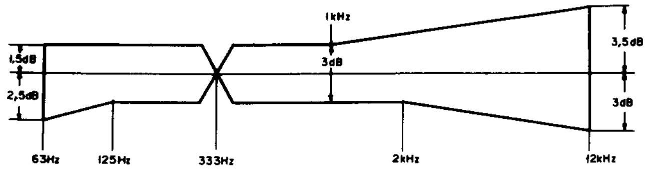
Utilizando la STD-608A con el interruptor DOLBY NR en la posición ON (tipo B).



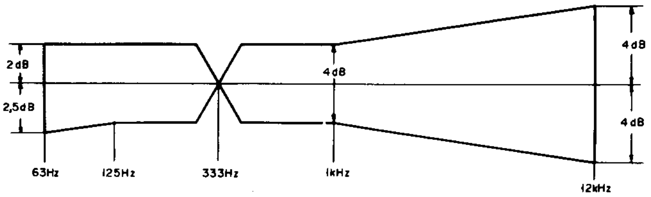
Utilizando la STD-608A con el interruptor DOLBY NR en la posición ON (tipo C).



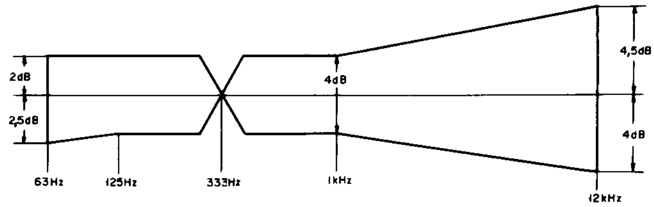
Utilizando la STD-603 con el interruptor DOLBY NR en la posición OFF.



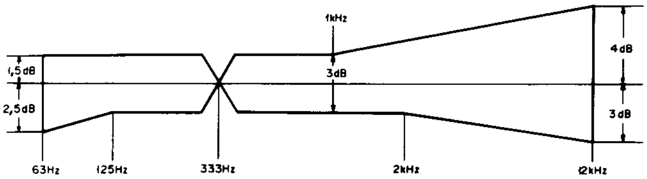
Utilizando la STD-603 con el interruptor DOLBY NR en la posición ON (tipo B).



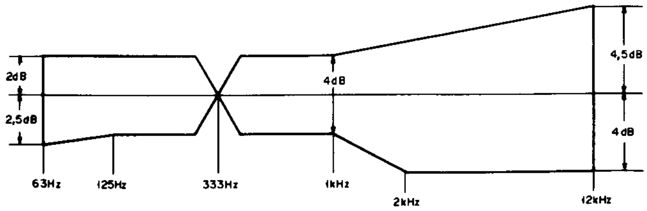
Utilizando la STD-603 con el interruptor DOLBY NR en la posición ON (tipo C).



Utilizando la STD-604 con el interruptor DOLBY NR en la posición OFF.



Utilizando la STD-604 con el interruptor DOLBY NR en la posición ON (tipo B).



Utilizando la STD-604 con el interruptor DOLBY NR en la posición ON (tipo C).s

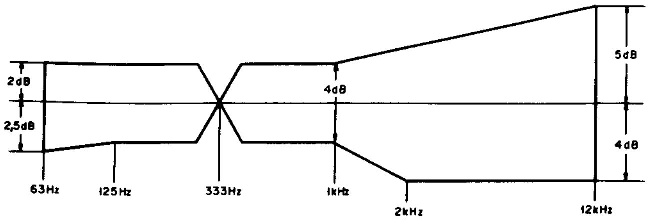
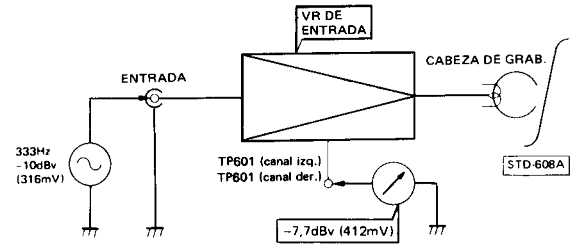


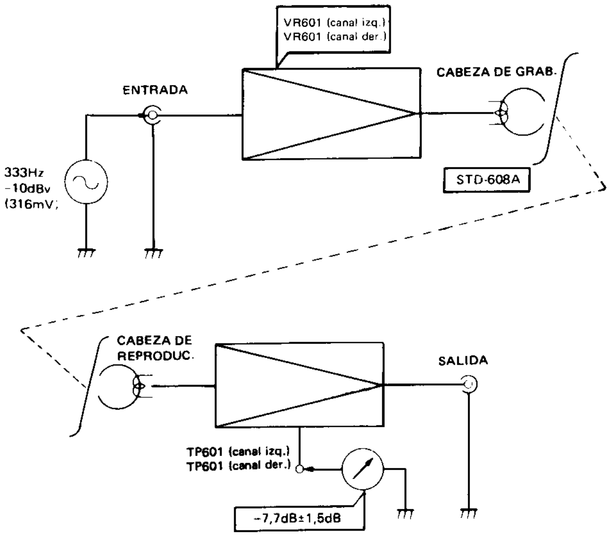
Fig. 5 Respuesta en frecuencia

AJUSTE DEL NIVEL DE GRABACIÓN

Ajuste:

Modo	Grabación Grabación/reproducción
Señal de entrada . . . . . . (desde INPUT)	333Hz, - 10dBv (316 mV)
Cinta de prueba	STD-608A (NORM) STD-603 (CrO_2) STD-604 (METAL)
Voltímetro de CA . . . . (escala de mV)	TP601 del conjunto L de DOLBY NR TP601 del conjunto R de DOLBY NR


VR DE ENTRADA
ENTRADA
CABEZA DE GRAB.
333Hz
-10dBv
(316mV)
TP601 (canal izq.)
TP601 (canal der.)
STD-608A
-7,7dBv (412mV)


VR601 (canal izq.)
VR601 (canal der.)
ENTRADA
CABEZA DE GRAB.
333Hz
-10dBv
(316mV)
STD-608A
CABEZA DE REPRODUC.
SALIDA
TP601 (canal izq.)
TP601 (canal der.)
-7,7dB±1,5dB

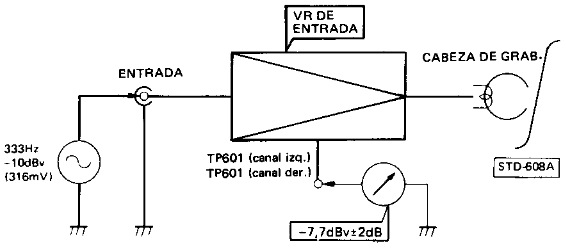
Procedimiento:

1. Poner la cinta de prueba STD-608A y ajustar el control de nivel de entrada (INPUT) de modo que el voltímetro de CA indique - 7,7dBv (0,41V).
2. Poner el interruptor DOLBY NR en la posición ON. Ajustar el unidad en la posición FWD y grabar y reproducir señales de entrada en la STD-608A. Ajustar el VR601 (canal izq.) y el VR601 (canal der.) de modo que el voltímetro indique - 7,7dBv (0,41V).
3. Poner la cinta de prueba STD-603 y el interruptor DOLBY NR en la posición ON y el grabar y reproducir señales de entrada en la STD-603. Confirmar que el voltímetro de CA indique - 7,7dBv±1,5dB.
4. Poner la cinta de prueba STD-604 y el interruptor DOLBY NR en la posición ON y grabar y reproducir señales de entrada en la STD-604. Confirmar que el voltímetro de CA indique - 7,7dBv±1,5dB.

COMPROBACIÓN DEL MEDIDOR DE NIVEL

Ajuste:

Modo	Pausa de grabación
Señal de entrada . . . . . . (desde INPUT)	333Hz, - 10dBv (315 mV)
Voltímetro de CA . . . . (escala mV)	TP601 del conjunto L de DOLBY NR TP601 del conjunto R de DOLBY NR


VR DE ENTRADA
ENTRADA
CABEZA DE GRAB.
333Hz
-10dBv
(316mV)
TP601 (canal izq.)
TP601 (canal der.)
STD-608A
-7,7dBv±2dB

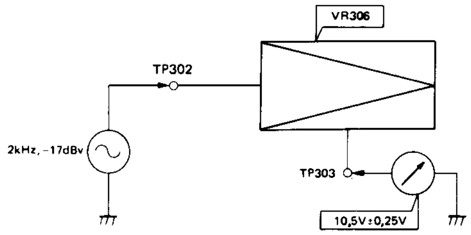
Procedimiento:

Ajustar el control de nivel de entrada (INPUT) de modo que el medidor de nivel indique 0 VU. Después comprobar que el voltímetro de CA indique - 7,7dBv ± 2dB.

AJUSTE DE DETECCIÓN DE LA CINTA GUIA (CT-7R solamente)

Ajuste.

Modo	Parada
Señal de entrada	2kHz, - 17dBv (0,4V P-P, onda senoidal) a TP302 del conjunto principal
Voltímetro de CA .... (escala mV)	TP303 del conjunto principal


VR306
TP302
2kHz, -17dBv
TP303
10,5V±0,25V

Procedimiento:

1. Extraer el conector CN315 del conjunto principal.
2. Ajustar el VR306 de modo que el voltímetro de CA indique 10,5V ± 0,25V.
3. Volver a poner el conector CN315 en su posición original.

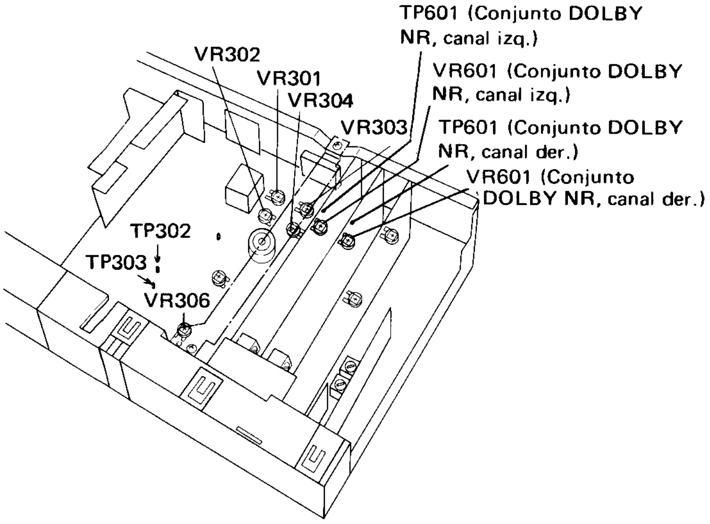
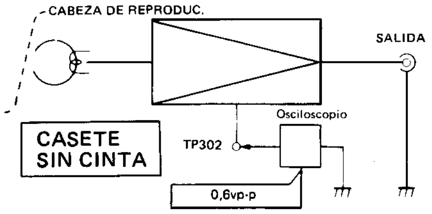

TP601 (Conjunto DOLBY NR, canal izq.)
VR302
VR301
VR304
VR601 (Conjunto DOLBY NR, canal izq.)
VR303
TP601 (Conjunto DOLBY NR, canal der.)
VR601 (Conjunto DOLBY NR, canal der.)
TP302
TP303
VR306

Fig. 6 Puntos de ajuste

Paso 2.

Ajuste:

Modo	Reproducción
Cinta	Casete sin cinta
Osciloscopio	TP302 del conjunto principal


CABEZA DE REPRODUC.
SALIDA
Osciloscopio
CASETE SIN CINTA
TP302
0,6vp-p

Procedimiento:

1. Confirmar que el osciloscopio indique - 10dBv (0,6V P-P, onda cuadrada).
2. Si se sobrepasan los 10dBv, puentear la sección mostrada en la figura 7 mediante soldadura.

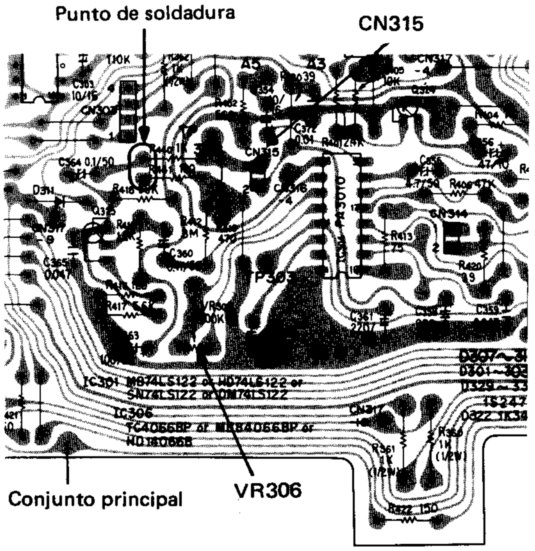

Punto de soldadura
CN315
Conjunto principal
VR306

Fig. 12-7 Punto de soldadura